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VOL. XXXIII

MARCH 1924

No. 3

*The tropical beauty of a typical winter scene in Florida, with its palms, motor boats and house boats, carries an appeal which few are able to resist. Those of us who can do so, hurry to spend as much time as possible in the warm sunshine, while those who cannot, hope for the time when they, too, can make the annual journey southward*

**MoToR  
BoatInG**

119 West 40th Street,  
New York, N. Y.

Photograph by M.  
Hosenfeld



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**F**OAM slithers under her gun'l's, spray sparkles over her bows, while astern she "settles down to it" and curls the miles up in her wake.

— for she's White Cap powered and you're proud of her and sure of her.

You never knew the full satisfaction and the true joy of motor boating, until you joined the thousands of Wisconsin White Cap fans!

**DEALERS!** 1924 looks like a Wisconsin year. If you want more marine motor business, you'll surely be interested in our Volume-Sales Proposition. Write!

# WISCONSIN White

**WISCONSIN MOTOR MFG. CO. MILWAUKEE, WISCONSIN**

*Advertising Index will be found on page 150*



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Powerful "Six" or Peppy "Four" you'll find your Wisconsin White Cap a happy choice. For with its years of untroubled service, you'll discover, one after another, the countless niceties—the examples of precision craftsmanship—which make such performance possible.

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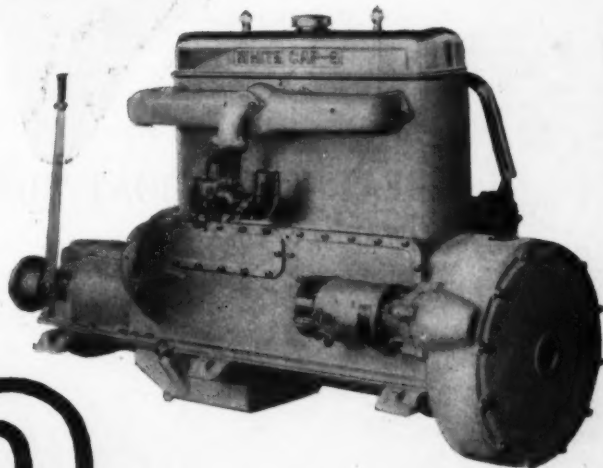
# Wisconsin

CONSISTENT

WISCONSIN MOTOR MANUFACTURING COMPANY  
Milwaukee, Wis.

#### BOAT BUILDERS!

You will find much to  
interest you in the  
Wisconsin proposition  
for 1924. Write!



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White Cap "6" \$985

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# Cap

WISCONSIN MOTOR MFG. CO. MILWAUKEE, WISCONSIN

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating, 119 West 40th Street, New York

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A handsome double cockpit all-mahogany runabout with a speed of 23 miles per hour and accommodations for seven. Economical, seaworthy and comfortable.

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Incorporated in Great Lakes Cruisers and Runabouts is the experienced craftsmanship and high development of long years leadership.

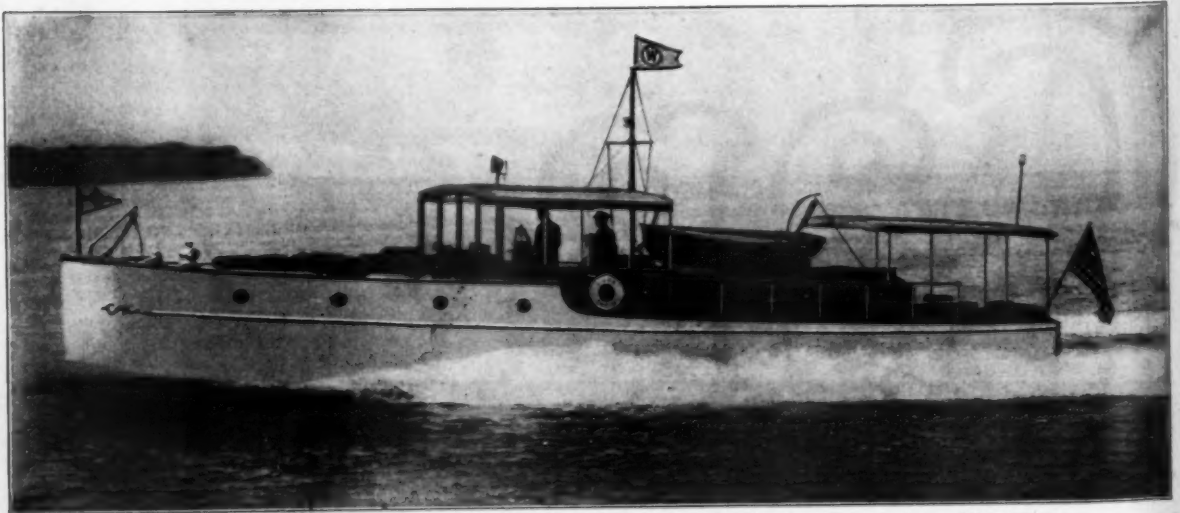
The New 26-foot Special Great Lakes Runabout is the outstanding quality value of the year.

A comfortable family boat powered with a high grade real marine engine of great serviceability.

Whatever your requirements for a Cruiser, Great Lakes builds to meet every condition. Real accommodations, and plenty of deck space ideally combined into seaworthy hulls of distinctive design and fast, clean running qualities.

*Send for the beautiful new Great Lakes bulletin "A" of the 26-ft. Runabout, or bulletin "H" for Cruisers.*

**GREAT LAKES BOAT BUILDING CORPORATION**  
**Milwaukee Wisconsin**



*The Famous Great Lakes 54-foot twin screw Express Cruiser. The finest express cruiser of its type.*

# To the Motorist

**M**Y window here looks out to the Great Atlantic Ocean! It is only three hundred feet away, perhaps four hundred! I watch the waves break, recede, break again, recede again. Out beyond the breaking waves, it is smooth. A few minutes ago, on the horizon line, I saw a coast steamer; nearer in, a tug with three barges in tow; then a private yacht—she was heading south, for Miami, perhaps; then a big four masted schooner, and how majestically she sailed along!

There's room aplenty out there! There's room aplenty at Biscayne Bay, on Long Island Sound, the Hudson, the Great Lakes, Lake Champlain—all wonderful cruising grounds that invite the motor boatman, the yachtsman. He heaves anchor in one place, he lets go in another and always he has his home along with him. No dust, no dirt, no crowds, no keeping one's place in a long parade, no worry about hotel accommodations, no maneuvering in a foul-smelling garage . . . only lights that invite idle speculation, only slapping water that lulls one to sleep!

To you who are weary of crowded roads, and dust and dirt to you who know not the joys of living aboard, I say, Come! Join the ranks of those who enjoy the sport of Kings! It costs no more than other sports, aye, motor boating is less expensive than motor car-ing. Get your boat now so that it will be ready for those days of spring that will come so quickly; days of warm sunshine and soft winds. You need have no worry because you know nothing about the handling of a boat; if you've driven a car, and toured, you can handle a boat, and cruise.

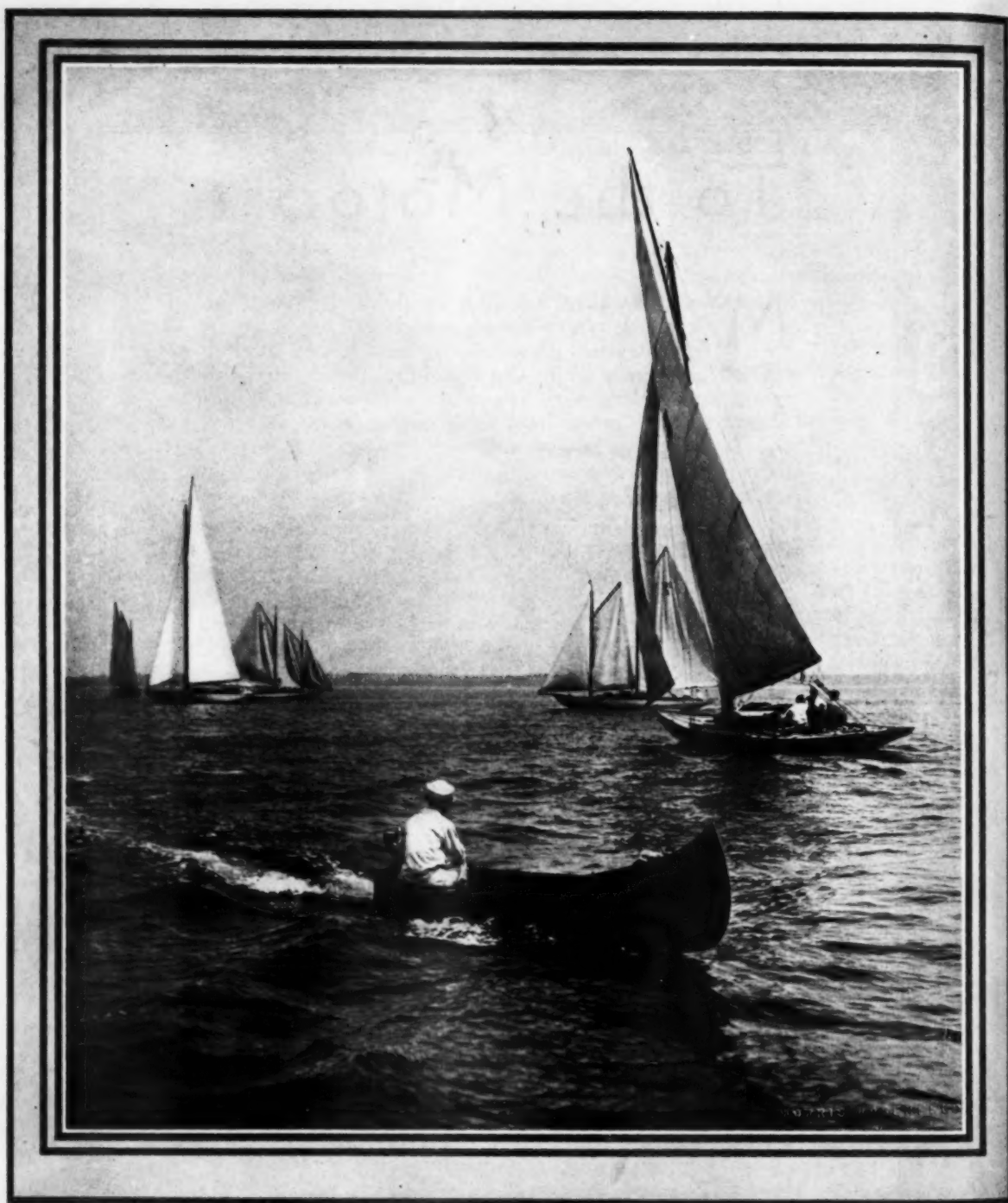
Come aboard!

Atlantic City, February 11, 1924

*Frank Stevens*

*Last summer Mr. Stevens put motor car-ing behind him for motor boating. He knows both sports; and would be glad to give you any help or information he can. A letter addressed to him care of this magazine will be forwarded—and promptly answered—Editor*





M. Rosenfeld

## Rocked in the CRADLE OF THE DEEP

*The outboard motor is the cradle of navigators. The boy who learns seamanship with such a boat will have a tremendous advantage over others when he comes to nav-*

*igate larger ones. He will know instinctively what to do in any situation. Get your boy an outboard motor and make him the captain of his soul.*



# CHAP Says

The outboard motor boat is the cradle of the sport. When your boy has learned to use his hands, turn him loose with one. He will grow up to be a resourceful accomplished motor boatman.]

If you become a motor boatman late in life as Frank Stevens did, whose experiences have been described in the pages of *MoToR BoatinG*, you started with a handicap. You knew motors, perhaps, but felt awkward. You lacked confidence in your seamanship, and were afraid of making a holy show of yourself before your betters. Although you soon learned the ropes you still remember with dread the day you made a Portuguese landing, because you couldn't walk your craft beam on to the club wharf.

For the youngster, boy or girl, there is no sport more invigorating than motor boating. There is none which better promotes self-confidence and early ability to make decisions and govern circumstances. So start your boy right by giving him an outboard motor.

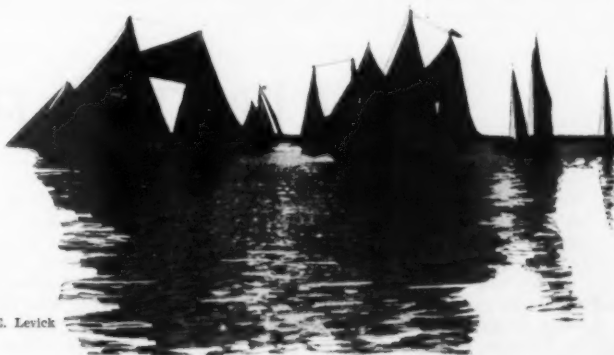
These little portable affairs have more than kept pace with the marine engine industry. Compared with their prototypes of twenty years ago they are like a chronometer contrasted with a grandfather's clock. You wind 'em up and they run until the last drop of gasoline has passed through the cylinders. They take care of themselves.

And while they do that their youthful skipers have a chance to pick up seamanship. With the child, learning is a matter of absorption. Mistakes are small and are easily remedied. The tricks of boat handling come naturally, and the skill that a boy acquires with small boats is the skill that is required for navigating large ones.

If you have a motor cruiser you can make your son your junior partner by giving him command of an outboard motor tender. If you have a boat but no son, shanghai a friend's boy and make him your coxswain. If you have a son but no boat, less than a hundred dollars stands between you and boating happiness.

The outboard motor is the Ford car of the sea. It is cheap, small, reliable, and it has the same advantage in the water that the Ford has over its more ponderous brothers ashore. But, better than the Ford, it is not restricted to dusty highways. It can go wherever there is a foot of water—along the coast, up rivers, across lakes, and around ponds. It is perfectly adapted to every need of small boating.

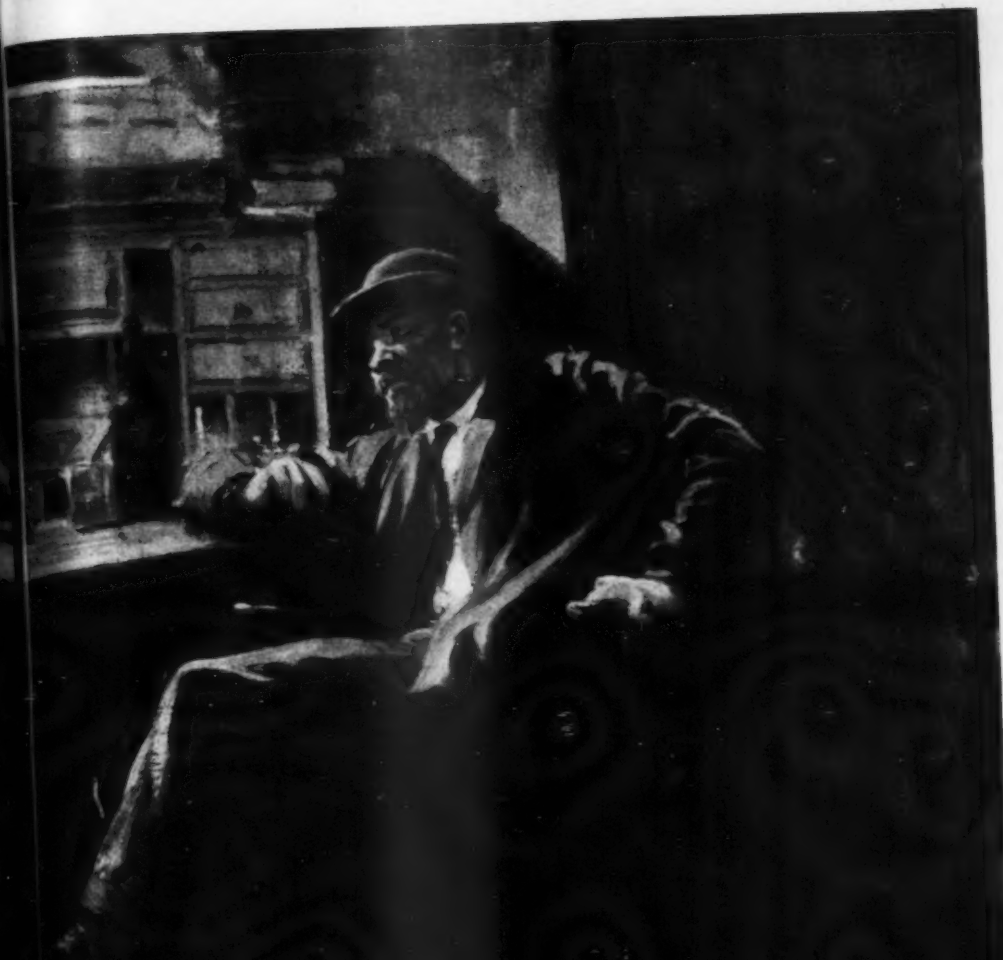
Our sport like every sport—is dependent for its continued popularity on the junior element. Few other sports offer the inducement to youth that the portable type of motor offers to young boatmen. So I say again, get your boy an outboard motor. Use it together, and grow younger with it as he grows older.



Photograph by E. Levick

*By*  
Peter  
B. Kyne





*Illustrated  
by  
Anton Otto  
Fischer*

Part

V  
3  
3  
|  
3

M  
A



*"You know, as well as anybody, Scraggs, that while our Government makes no bones of curiosity regardin' what we do with 'em. If we're caught sneakin' 'em into Mexico we'll*

## UNDER THE

**I**T WAS fully a week before Captain Scraggs's mental hemorrhage, brought on every time his mind reverted to his loss on the "ginseng" deal, ceased. During all of that period his peregrinations around the Maggie were as those of one for whom the sweets of existence had turned to wormwood and vinegar. Mr. Gibney confided to McGuffey that it was a toss-up whether the old man was meditating murder or suicide. In fact, so depressed was Captain Scraggs that he lacked absolutely

the ambition to rag his associates; observing which Mr. McGuffey vouchsafed the opinion that perhaps Scraggsy was "teched a mite in his headblock."

"Don't you think it," Mr. Gibney warned. "If old Scraggsy's crazy he's crazy like a fox. What's rilin' him is the knowledge that 'e's stung to the heart an' can't admit it without at the same time admittin' he'd cooked up a deal to double-cross us. He's just a-bustin' with the thoughts that's accumulatin' inside him. Right now he'd



Part  
One

*selling a lot o' retired rifles an' ammunition, nevertheless it's goin' to develop a heap o' spend the rest of our lives in a Federal penitentiary for bustin' the neutrality laws.<sup>4</sup>*

# E JOLLY ROGER

drown his sorrers in red liquor if he could afford it."

"He's troubled financially, Gib."

"Well, you know who troubled him, don't you, Bart?"

"I mean about the cost o' them repairs in the engine room. Unless he can come through in thirty days with the balance he owes, the boiler people are goin' to libel the Maggie to protect their claim."

Mr. Gibney arched his bushy eyebrows. "How do you know?" he demanded.

"He was a-tellin' me," Mr. McGuffey admitted weakly.

"Well, he wasn't a-tellin' me." Mr. Gibney's tones were ominous; he glared at his friend suspiciously as from the Maggie's cabin issued forth Scraggsy's voice raised in song.

"Hello! The old boy's thermometer's gone up, Bart. Listen at him. 'Ever o' thee he's fondly dreamin'.' Somethin's busted the spell an' I'll bet a cooky it was ready cash." He menaced Mr. McGuffey with a rigid index

finger. "Bart," he demanded, "did you loan Scraggsy some money?"

The honest McGuffey hung his head. "A little bit," he replied childishly.

"What d'ye call a little bit?"

"Three hundred dollars, Gib."

"Secured?"

"He gimme his note at eight per cent. The savin's bank only pays four."

"Is the note secured by endorsement or collateral?"

"No."

"Hum-m-m! Strange you didn't say nothin' to me about this till I had to pry it out o' you, Bart. How about you?"

"Well, Scraggsy was feelin' so dog-goned blue—"

"The truth," Mr. Gibney insisted firmly, "the truth, Bart."

"Well, Scraggsy asked me not to say anythin' to you about it."

"Sure. He knew I'd kill the deal. He knew better'n to try to nick me for three hundred bucks on his danged, worthless note. Bart, why'd you do it?"

"Oh, hell, Gib, be a good feller," poor McGuffey pleaded.

"Don't be too hard on ol' Scraggsy."

"We're discussin' you, Bart. 'Pears to me you've sort o' lost confidence in your old shipmate, ain't you? 'Pears that way to me when you act sneaky like."

McGuffey bridled. "I ain't a sneak."

"A rose by any other name'd be just as sweet," Mr. Gibney quoted. "You poor misguided simp. If you ever see that three hundred dollars again you'll be a lot older'n you are now. However, that ain't none o' my business. The fact remains, Bart, that you conspired with Scraggsy to keep things away from me, which shows you ain't the man I thought you were, so from now on you go your way an' I'll go mine."

"I got a right to do as I blasted please with my own money," McGuffey defended hotly. "I ain't no child to be lectured to."

"Considerin' the fact that you wouldn't have had the money to lend if it hadn't been for me, I allow I'm insulted when you use the said money to give aid an' comfort to my enemy. I'm through."

McGuffey, smothered in guilt, felt nevertheless that he had to stand by his guns, so to speak. "Stay through, if you feel like it," he retorted. "Where d'ye get that chatter? Ain't I free, white, an' twenty-one year old?"

Mr. Gibney was really hurt. "You poor boob," he murmured. "It's the old game o' settin' a beggar on horseback an' seein' him ride to the devil, or slippin' a gold ring in a pig's nose. An' I figured you was my friend!"

"Well, ain't I?"

"Fooley! Fooley! Don't talk to me. You'd sell out your own mother."

"Them's fightin' words, Gib."

"Shut up."

"Gib, you tryin' to pick a fight with me?"

"No, but I would if I thought I wouldn't git a foot-race instead," Gibney rejoined scathingly. "Cripes, what a double-crossin' I been handed! Honest, Bart, when it come to that sort o' work Scraggs is in his infancy. You sure take the cake."

"I ain't got the heart to clout you an' make you eat them words," Mr. McGuffey declared sorrowfully.

"You mean you ain't got the guts," Mr. Gibney corrected him. "Bart, I got your number. Good-bye."

Mr. McGuffey had a wild impulse to cast himself upon the Gibney neck and weep, but his honor forbade any such weakness. So he invited Mr. Gibney to betake himself to a region several degrees hotter than the Maggie's engine room; then, because he feared to linger and develop a sentimental weakness, he turned his back abruptly and

descended to the said engine room.

On his part, Adelbert P. Gibney entered the cabin and glared long and menacingly at Captain Scraggs. "I'll have my time," he growled presently. "Give it to me an' give it quick."

The very intonation of his voice warned Scraggs that the present was not a time for argument or trifling. Silently he paid Mr. Gibney the money due him; in equal silence the navigating officer went to the pilot house, unscrewed his framed certificate from the wall, packed it with his few belongings, and departed for Scab Johnny's boarding house.

"Hello," Scab Johnny saluted him at his entrance.

"Quit the Maggie?"

Mr. Gibney nodded.

"Want a trip to the dark blue?"

"Lead me to it," mumbled Mr. Gibney.

"It'll cost you twenty dollars, Gib. Chief mate on the Rose of Sharon, bound for the Galapagos Islands sealing."

"I'll take it, Johnny." Mr. Gibney threw over a twenty-dollar bill, went to his room, packed all of his belongings, paid his bill to Scab Johnny, and within the hour was aboard the schooner Rose of Sharon. Two hours later they towed out with the tide.

Poor McGuffey was stunned when he heard the news that night from Scab Johnny. When he retailed the information to Scraggs next morning, Scraggs was equally perturbed.

He guessed that McGuffey and Gibney had quarreled and he had the poor judgment to ask McGuffey the cause of the row. Instantly, McGuffey informed him that that was none of his dad-fetched business—and the incident was closed.

The three months that followed were the most harrowing of McGuffey's life. Captain Scraggs knew his engineer would not resign while he, Scraggs, owed him three hundred dollars; wherefore he was not too particular to put a bridle on his tongue when things appeared to go wrong. McGuffey longed to kill him, but dared not. When, eventually, the railroad had been extended sufficiently far down the coast to enable the farmers to haul their goods to the railroad in trucks, the Maggie automatically went out of the green-pea trade;

simultaneously, Captain Scraggs' note to McGuffey fell due and the engineer demanded payment. Scraggs demurred, pleading poverty, but Mr. McGuffey assumed such a threatening attitude that reluctantly Scraggs paid him a hundred and fifty dollars on account, and McGuffey extended the balance one year—and quit.

"See that you got that hundred and fifty an' the interest in your jeans the next time we meet," he warned Scraggs as he went overside.

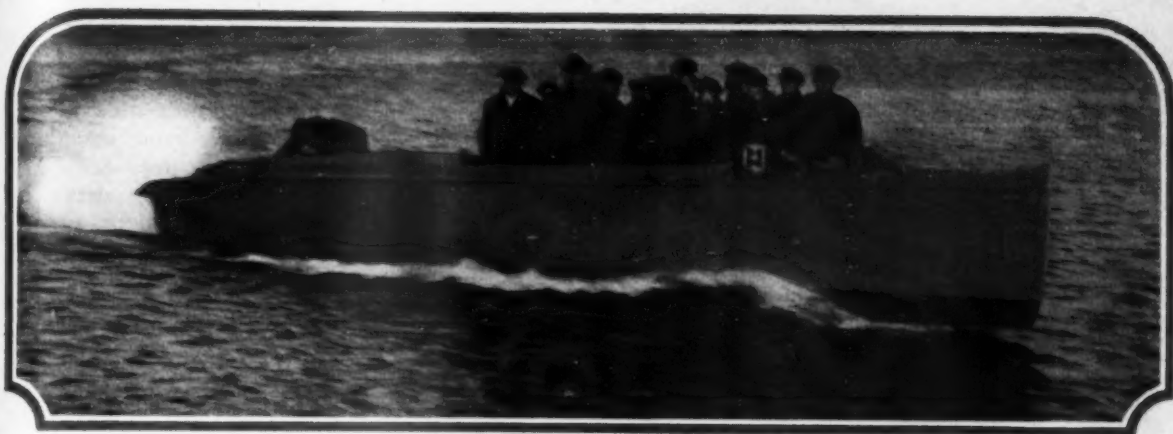
Time passed. For a month the Maggie plied regularly between Bodega Bay and San Francisco in an endeavor to work up some business in farm and dairy produce, but a gasoline schooner cut in on the run and declared a rate war, whereupon the Maggie turned her blunt nose riverward and for a brief period essayed some towing and general freighting on the Sacramento and San Joaquin. It was unprofitable, however, and at last Captain Scraggs was forced to lay his darling little Maggie up and take a job as chief officer of the ferry steamer Encinal, plying between San Francisco and Oakland. In the meantime, Mr. McGuffey, after two barren months "on the beach," landed a job as second assistant on a Standard Oil tanker running to the West Coast, while thrifty Neils Halvorsen invested the savings of ten years in a bay scow known as the Willie and Annie, arrogated to himself the title of captain, and proceeded to freight hay, grain, and paving stones from Petaluma.

The old joyous days of the green-pea trade were gone

(Continued on page 70)

#### DO NOT FAIL TO READ THIS

**This story, Under the Jolly Roger, will prove to be one of the finest and most original of the entire series which Peter B. Kyne has prepared for you. It is rather long, making it necessary to run it through four installments, each of which will give an evening of excellent reading. Be sure to read this first installment, for if you do, we will not need to remind you about the rest. Our adventurers embark upon some very unusual events and we are very certain that you will enjoy every line of the tale.—Editor.**



*Forty-five foot surface propeller motor boat running 15 m.p.h. with twenty-five passengers*

## Solving a River Navigation Problem

*Shallow Draft Passenger-Carrying Boats of The Slow Speed Type, Built for River Work by the Sea Sled Company, Ltd., for Use By A Prominent Oil Company*

**A**N unusual problem was recently presented to the Sea Sled Company, Ltd., for solution. This involved the navigation of a shallow river by boats which were required to carry from 25 to 30 passengers at speeds of about 15 m.p.h., without exceeding a draft of 18 inches. This total draft was to include propellers, skegs, rudders, etc. After some experiment, a modification of the original Viper type hull, developed by Mr. Hickman, was decided upon. This model shows low resistance at moderate speeds when carrying relatively heavy weights. Its dimensions were made as follows: The overall length 47 feet 5 inches, and the overall beam 9 feet 8 inches. The length of passenger cockpit was 23 feet 6 inches, while tank capacity was provided for 150 gallons of fuel and 50 gallons of fresh water.

The requirements called for practically continuous heavy service, and in order to meet this, a pair of heavy duty marine engines of  $5\frac{1}{2}$  by  $6\frac{1}{2}$ -inch bore and stroke were selected. These develop full 40 h.p. at 700 r.p.m. and weigh 1,500 pounds each, not including the batteries.

The boats are arranged for one-man control and on their trials developed 17.1 m.p.h. light, while the loaded speed was only slightly less. The shallow water trials did not materially affect the performance of the boat in either engine revolutions or speed.



*Two 40 h. p. heavy duty gasoline engines weighing 1,000 pounds each installed in the stern and driving individual surface propellers*



*Stern view of the 45-foot surface propeller river boat showing the propellers, engine compartment, and the large passenger cockpit forward*



*There are persons in the world who aren't able to run a wheelbarrow up a straight line, let alone cultivate a friendly attitude toward a piece of machinery, which is one reason for*

## BETTER ENGINES

By  
FARR

by

NORMAN BEASLEY

**T**HE man who furnished the slogan of "A Kermath Always Runs" must have rounded up his idea while waiting for Jack Farr.

Jack is the person behind the motor he has made famous—or, the motor that has made him famous, however you prefer it—and he is an individual who is always on the move. At various times, during the past several months, I have endeavored to get him to sit still long enough to talk about himself; what is written here is, so Jack says, a pretty complete accounting of the important things in his life but it was secured only after much correspondence and patient waiting.

Farr is not a big fellow. Rather, he runs a trifle under medium size. He wears spectacles that fail to subdue the determination that is in his eyes but there is a grin always lurking in the corners of his mouth, showing that he can stop, on occasion, look around and chuckle. He possesses a nose that indicates a good quality of leadership, a thin face and a slight body stored with nervous energy . . . there, in a few words, you pretty nearly have him.

He really got into the motor field back in the old days when the Cadillac company was fighting for a start. He was representative for the automobile company in Seattle, Wash., and later still became a branch manager for the White company, in Cincinnati, O. The year of 1911 saw him enter the marine motor field.

From here he can better tell his own story—

"Back in the days when I was fussing around in the automobile field it was tough choosing to pick the right employer," he recalled. "The word standardization had not been brought into the automobile industry at that time. One company—and there were dozens of them springing up every month—looked to be as good as another.

"I remember, when I was in Seattle, that I came awful close to investing every nickel I had—and could borrow—in a branch

(Continued on page 118)





# Adventures of the Motorboaters

*Drusilla's Cruise in Strange Florida Waters, as A Challenge to Those Who Look Upon Motorboating as A Lazy and Profitless Sport, and What Happened When A Stranger Was Taken Aboard Whose Suggestions Invariably Led into Thrill and Mystery*

By W. LIVINGSTON LARNED

## Part Two

**M**OTORBOATS, large and small, turn as naturally to Florida waters, when the first snow begins to fly, as flowers turn to the sun, and for very much the same reason. This southward flight has developed to such an extent, that the sport has been given a most beneficial boost in the eyes of those who had never considered it seriously before.

Motorboats would be almost as common as automobiles were it not for the fact that they are bashful self-advertisers. You see them only if you happen to follow their seasonal vagaries. But from Fernandina right down to Key West, there is one long, glorified regatta, and the populace in general simply can't avoid getting an eye-full. Boat building plants assure us that Florida has done more, in recent years, to stimulate interest in motor boating, than any other single source. You can see them in action; you watch supremely happy people taking cruises which smack of mingled adventure and romance. And you say to yourself: "I'll have to look into this sport. Wonder what a little boat would cost?" The next step is the Motor Boat Show, and the season following you are en route down the Inside Route, with a cabin-full of official

charts and books and a heart bubbling over with ecstasy.

But, as Peter so often told me:—"It's the lure of the thousands of keys, the tropic shores, the cocoanut palms and the moss, that makes motor boating in Florida a magic performance. Without half trying, I can imagine I'm an old Spanish Buccaneer or Ponce de Leon."

However, our ignorance of ports and practices was such as to make us proceed cautiously. This first stopping-place near St. Augustine gave us such an altogether tempting and relishable morsel, that we were loath to proceed. And then there was Thomas Thomas!

That initial adventure with the mysterious new member of our party had only attracted us to him to a greater degree. He was ever a living symbol of the very Spirit of Adventure itself, with his clean-cut features, his easy grace, his sureness of himself, his breezy sport suit and his bare head. Yes—Thomas Thomas was welcome! If, as we very greatly suspected, Cap'n Mock was called back to Miami and left us without a pilot, we had Thomas Thomas—and there was nothing Thomas Thomas did not appear to know.

Peter was sitting on the gasoline dock, at which Drusilla



*This is the creek which was closed by the seine stretched across it, preventing the fish from returning to the sea*

was made fast, when his spontaneous exclamation concerning Thomas awakened me from dreams of perfumed empire.

"That chap must have had a reason for taking us where he did the other day," said Peter, "now that I think it over, it was all very strange, what with the trailing of the Shrimp Fleet and catching those pirates dumping shiners overboard by the —million! It's almost as if he was looking for — well, evidence or something."

"We are to make one more trip with him before we start southward," I broke in, as I happened to recall a note which had been tossed on board some time during the early morning. "I was beginning to fear Thomas had consumed some of that poison hooch they say is playing havoc around town. Not a word from him — until this arrived," and I read the letter aloud:



The mysterious shack under clumps of bay and scrub oak in which the rank poison is manufactured. The deep inlet is well hidden from view

"Dear Friends: Certain things prevented me from getting in touch with you sooner. But I'm with Drusilla on her Key West lap, if you have not changed your minds about allowing me to be a member of the party. Got some new charts today. They'll help us. Before we go, I suggest another cruise northward. There's a trout ground that should please the angling engineer."

There was a P. S., which read, significantly enough: "Do not be tempted to buy or drink any of the moonshine that passes for likker in this neighborhood. It's dangerous. Five men killed by it in four days locally, and many others in a critical condition. I just thought I'd warn you, because you might fall overboard or get cramps or just want a little party. Nix on local hooch, and if any of the sea-wall boatmen hint at your buying or trying it, land them over the head with the first thing you can lay hands to."

"He has something of interest up his sleeve," declared

Peter, "if he asked me to go straight from here to Bermuda in our little tub, I think I'd say yes. That man fascinates me. There's something about him we don't know: some hidden and important side. Plenty of

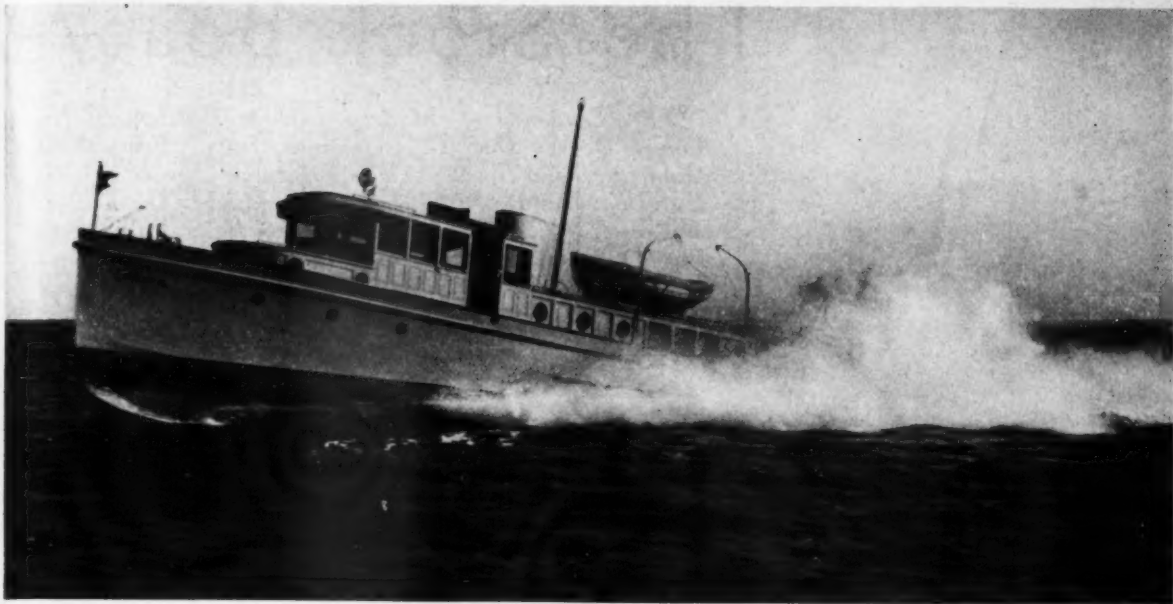
(Continued on page 134)



Rickety wharf, guarded by two ugly dogs, with a moonshine key in the distance. Visitors are not welcome



Peter looks across the Pirate creek. He is standing on a boat, under which was found dynamite used for killing fish in great numbers



One of the new high speed motor patrol boats built for the New York City Police Department, and powered with a pair of Sterling Dolphin engines of 300 h.p. each

# The Proposed Coast Guard Fleet

IT begins to look as though the great motor fleet asked by the U. S. Coast Guard, for the prevention of smuggling along our coasts, is to become a reality. However, it also appears that the Coast Guard is not to be given all it asked for; but then, that is to be expected from Congress and the guardians of the public funds.

Briefly, the service had asked appropriation, in addition to moneys for its regular work, of some \$28,500,000 with which to purchase or construct twenty new steam cruising cutters and several hundred motor craft of different sizes to patrol the coasts and Lakes, and to provide funds for supplying, operating and manning the additional vessels during the fiscal year beginning next July first.

On February 1 the President submitted to the House supplemental estimates of appropriations for this work totaling \$13,853,989, upon the recommendation of Director of the Budget H. M. Lord. Despite the stand taken by Secretary of the Treasury Mellon that surplus Navy craft would not be found suitable for the arduous Coast Guard work proposed, President Coolidge accepted General Lord's recommendation that the estimates be cut and that a number of Naval vessels be transferred and refitted for the new anti-rum running fleet.

The motor boat fleet provided by the supplemental estimates, however, will remain substantially as requested by the Coast Guard, the estimates having included funds for construction of 323 motor craft of two classes.

The details of the estimates approved by the President are as follows:

To condition and equip 20 torpedo boat destroyers, at \$100,000 each	\$2,000,000
To condition and equip 2 mine sweepers, or other suitable type of vessel, at \$55,000 each	110,000
To construct 223 cabin cruiser type motor boats at \$37,500 each	8,362,500
To equip same, including radio outfits	909,000
To construct 100 Seabright dory type motor boats, at \$8,000 each	800,000
To equip same, at \$125 each	12,500
Total	\$12,194,000

## Request for Funds by the Coast Guard for Constructing a Large Fleet of Patrol Vessels Seems About to be Granted

By A. W. Payne

The additional \$1,645,622 included will cover pay and allowances for commissioned, warrant and enlisted personnel, rations, fuel, ship stores, rebuilding stations and refitting others, and other contingent expenses to the plan.

It is planned to reopen 19 life saving stations now on the inactive list, to act as bases for the fleet; to organize 24 section bases for super-

vising the activities of the vessels and boats engaged in prevention of liquor smuggling; to establish three receiving stations for the equipment and training of recruits; and to increase the civilian clerical personnel to handle the greatly increased administrative work consequent.

The amounts for ship chandlery, fuel and outfits were based upon the belief that the 22 major vessels will be in commission for two months in the fiscal year 1924; that 50 of the 223 cabin cruisers and 50 of the Seabright dories will be in active service for one and one-half months, and that the 19 life saving stations will be reopened three months before the end of the fiscal year.

A paragraph in the supplemental estimates approved by the President may let the Coast Guard out of using the naval ships, because it reads that the \$12,194,000 is for "additional vessels and boats for the use of the Coast Guard in enforcing the laws of the United States and in performing the duties with which the Coast Guard is charged, to be constructed or purchased in the discretion of the Secretary of the Treasury. The Secretary of the Navy would also be authorized to transfer to the Treasury Department, for the use of the Coast Guard," such vessels of the Navy, with their outfits and armaments, as can be spared by the Navy and as are adapted to the use of the Coast Guard.

Secretary Denby has expressed his willingness to turn over what vessels could be used, but officers of the Coast Guard and Mr. Mellon have stated the Naval vessels are ill fitted for the purposes for which the motor fleet is

(Continued on page 116)



# The Stock Boat—A

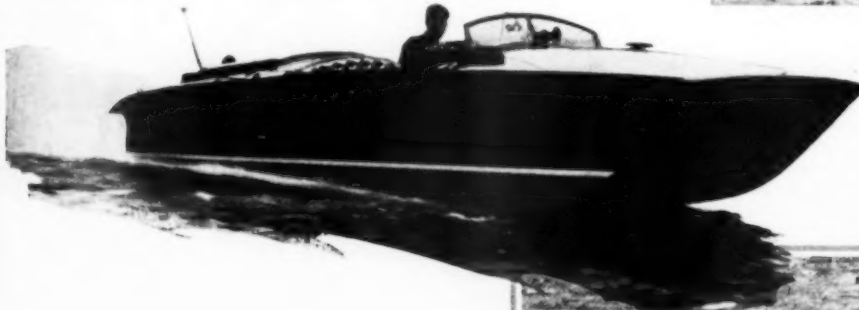
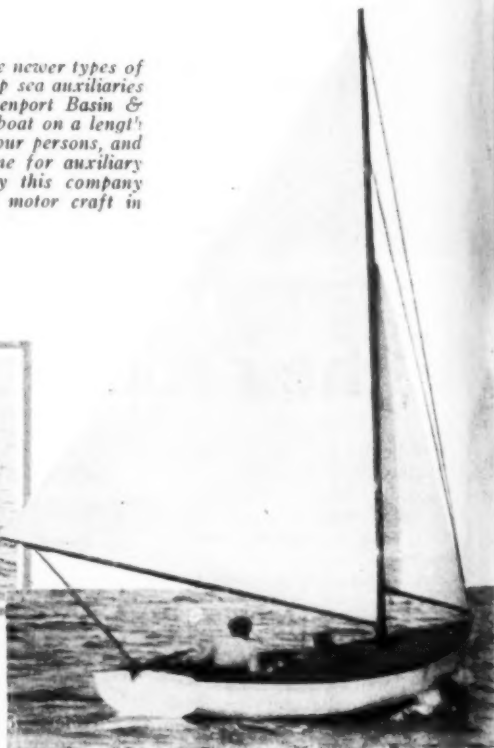
*The Tendency of Modern Life is Efficiency. No Longer Do We Deal In Individual Units. Everywhere Quantities, and Speed are The Principal Considerations. Our Boat Builders Produce Their Product In Quantities, and on A Strictly Modern Production Basis. They Are Put Through The Shops in A Manufacturing Way, and Every Boat Is Identical with Its Mate. The Increased*

*Among the most popular of the newer types of standardized boats are the deep sea auxiliaries such as this, built by the Greenport Basin & Construction Company. This boat on a length of 32-feet can accommodate four persons, and is powered with a small engine for auxiliary service. Other boats built by this company are larger and more powerful motor craft in several sizes up to 45-feet*

Photograph by M. Rosenfeld



*A little boat which will furnish great sport for the youngsters and even their father's, is a little 18-foot sloop built by the Baker Yacht Basin, Inc., of Quincy Point, Mass. Larger boats in 18 and 23-foot lengths are also built, and can be powered with outboard engines if necessary*



*Speed has an unusual appeal to many people. When this is combined with seaworthiness and safety which the present day Sea Sled embodies, we have an unusual combination. Sea Sleds are built in many standard sizes from the small 11-foot dinghy up to a large fast 28-foot craft, powered with a Sterling Dolphin engine*

*The Racine Boat Company of Racine, Wis. build an unusually complete line of fast runabouts. These boats in 19, 22½, and 25-feet can be equipped with any of the modern engines suitable to its size. The speed will vary from 12 to 33 or more miles, depending on the power plant. These boats are thoroughly standardized and furnished complete in every way*





# An American Product

*Efficiency Results in A Better Product, and A Reduction In Manufacturing Costs to The Direct Benefit of The Boat User. The Wide Experience of The Boat Builders Results In A Craft Which Is Far Superior, Both Structurally and Economically Then The Small Custom Built Boat Could Ever Hope to be*

Photograph by M. Rosenfeld



*Some builders prefer to specialize in smaller craft, the Skaneateles Boat & Canoe Company have long specialized in outboard motor boats, row boats, canoes, and sail boats. The little craft shown is a typical example of their work and is one of the many boats which this company builds and distributes in large quantities*



*One of the earliest exponents of the standardized stock cruiser was the International Ship & Marine Engine Company of Nyack, N. Y. Their standard 32-foot cruiser equipped with Kermath engines is one of the most popular of this type of boat. It is well designed and thoroughly standardized*



*High class runabouts are fascinating, and the Bear Cats and Baby Bear Cat pictured here especially so. These boats are built on a most modern production basis and supplied with Hall-Scott and Scripps engines as standard equipment. In finish and detail they are most carefully worked out*

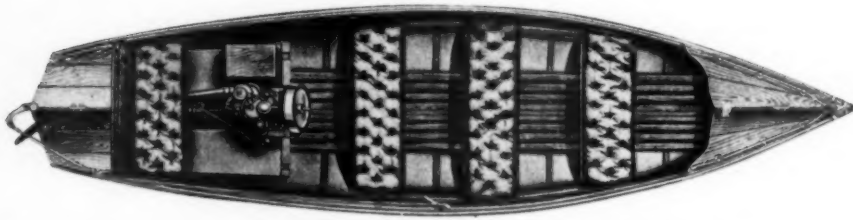


*Fast cruisers are the specialty of the Rochester Boat Works. A most complete line of standardized boats includes cruisers of 33, 36, 45 50, 55 and 62-feet in length. Their construction is thoroughly modern*

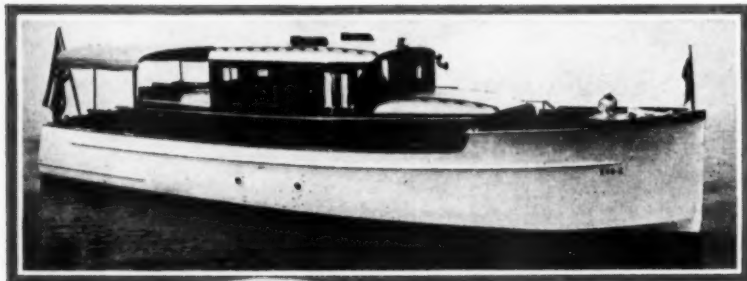
*One of the most popular of the newer standardized craft is the 34-foot Sea Skiff, built by the Consolidated Shipbuilding Corporation and termed their play boat. This combines speed of the runabout with comfort and ability of the cruiser*

Photograph by M. Rosenfeld

# Builders of FINE BOATS



The Mullins series of standardized steel boats has been refined and improved until it is today one of the most practical and popular for all purposes. These boats are all substantially built, with heavy oak keels and steam bent frames. The hull is of heavy gauge galvanized steel plates, pressed to form by powerful presses, with welded and leak proof joints throughout.

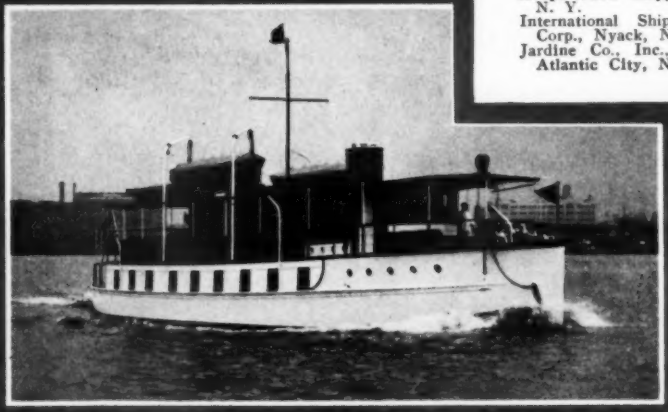


The Richardson Boat Company of North Tonawanda, have specialized in runabouts and cruisers in many sizes. The runabouts run from 20 to 32 feet, while the cruisers vary between 29 and 50 feet.



Photograph by M. Rosenfeld

Perhaps the best known standardized stock boat today is the Elco Cruisette. This popular 34-foot boat is obtainable from stock the same as any other commodity. The manufacturing processes have been perfected to an unusually fine degree, and true production methods have followed throughout its construction. The Elco Company also builds and stocks the 30-foot Veedette, the 40-foot cruiser, and the big 56-foot twin screw cruiser.



Photograph by S. N. Pearce

## American Builders of

Albany Boat Corp., 7th Street, Watervliet, N. Y.  
American Boat Co., Detroit, Mich.  
Auto & Marine Engineering Co., Wilmington, Del.  
Backus & Son, G. T., Fort Pierce, Fla.  
Baker Yacht Basin, Quincy, Mass.  
Beetle, Carl N., New Bedford, Mass.  
Belle Isle Boat & Engine Co., Detroit, Mich.  
Brooks Manufacturing Co., Saginaw, Mich.  
Brown, E. H., 207 Bay St., Taunton, Mass.  
Burger Boat Works, Manitowoc, Wis.  
Bryant Boat Works, Wyandotte, Mich.  
Cape Cod Shipbuilding Corp., Wareham, Mass.  
Casey Boat Bldg. Co., Fairhaven, Mass.  
Chaisson, G. L., Swampscott, Mass.  
Chance Marine Const. Co., Annapolis, Md.  
City Island Boat Corp., City Island, N. Y.  
Columbia Boat Works, Mt. Vernon, N. Y.  
Consolidated Shipbuilding Corp., Morris Heights, N. Y.  
Cuthbert Co., A. G., Sandusky, Ohio  
Davis & Son, M. M., Solomons, Md.  
Dean Canoe & Boat Co., Ltd., Walter, Toronto, Canada  
Defoe Boat & Motor Works, Bay City, Mich.  
Densmore, J. M., 79 Milk St., Boston, Mass.  
Ditchburn Boats, Ltd., Gravenhurst, Muskoka, Canada  
Dodge Works, Horace E., Detroit, Mich.  
Dunphy Boat Mfg. Co., Eau Claire, Wis.  
Elco Works, The, Ave. A, Bayonne, N. J.  
Everett Hunter Boat Co., McHenry, Ill.  
Evinrude Motor Co., Milwaukee, Wis.  
Fay & Bowen Engine Co., Geneva, N. Y.  
Fellows & Stewart, Wilmington, Cal.  
Gidley Boat Co., Ltd., Penetang, Ontario, Can.  
Gordon Boat Building Co., Greenpoint, Brooklyn, N. Y.  
Gray, R. D., Thomaston, Me.  
Great Lakes Boat Building Corp., Milwaukee, Wis.  
Greenport Basin & Const. Co., The, Greenport, N. Y.  
Hacker Boat Co., 1525 Crane Ave., Detroit, Mich.  
Harrison Boat Works, R. W., 3828 Summit Ave., Toledo, Ohio.  
Hayman, T. B., Elizabeth City, N. C.  
Hoops-Wood Shipyard, Inc., Rockaway Beach, N. Y.  
International Shipbuilding & Marine Engine Corp., Nyack, N. Y.  
Jardine Co., Inc., Edward Fell, Carson Ave., Atlantic City, N. J.

Among the largest types of boats which can be considered standardized craft, are the special form of house boat cruisers, built by the Mathis Yacht Building Company of Camden, N. J. These boats are in varying lengths and houseboat type.

The Toppa Boat Company of Medford, Mass. are the builders of this standardized 30-foot express cruiser, which is fitted with either a Kermath or Wisconsin engine. It is of the modified V-bottom type, and also thoroughly standardized. Many other types of open runabouts and fast launches are also built by this company

Chris-Craft is a fast runabout being produced in large quantities by Chris Smith & Sons, at Algonac, Mich. This boat is 26 feet in length and is capable of speeds up to 35 miles an hour with the standard equipment used. It is the aim of the builder to turn these out as a thoroughly finished product



Photograph by F. H. Stone

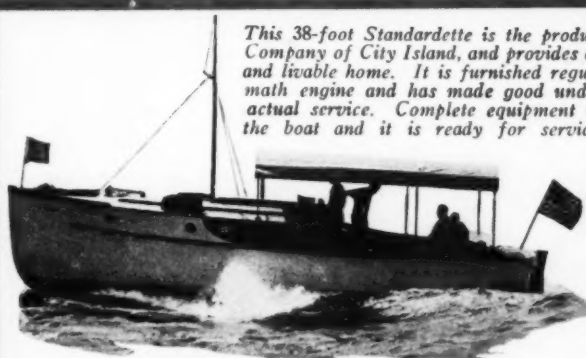
## Standardized Boats

Kidney & Son, Dan, 650 Main St., West Depere, Wis.  
Kiesewetter, Walter A., Miami, Fla.  
Kyle Co., T. A., City Island, N. Y.  
Lawley & Son Corp., George, Boston, Mass.  
Liggett & Sons Co., A. G., Wyandotte, Mich.  
Luders Marine Construction Co., Stamford, Conn.  
Lyman Boat Works, Cleveland, Ohio  
McLough, Sydney C., Marine City, Mich.  
Mathis Yacht Building Co., Cooper's Point, Camden, N. J.  
Mathews Boat Co., Daytona, Fla.  
Matthews Boat Co., The Port Clinton, Ohio  
Mullins Body Corp., 622 Depot St., Salem, Ohio  
Monarch Marine Construction Co., Washington, D. C.  
New England Motor Boat Works, Cos Cob, Conn.  
New Jersey Motors, Inc., Keyport, N. J.  
New York Yacht, Launch & Engine Co., Morris Heights, N. Y.  
Old Town Canoe Co., Old Town, Me.  
Perrine, J. H., Barnegat, N. J.  
Peterborough Canoe Co., Peterborough, Ontario, Canada  
Power Marine Ways, West Palm Beach, Fla.  
Racine Boat Co., 1908 Holman St., Racine, Wis.  
Ramaley Boat Co., Wayzata, Minn.  
Red Bank Yacht Works, Shrewsbury River, Red Bank, N. J.  
Richardson Boat Co., North Tonawanda, N. Y.  
Rochester Boat Co., Charlotte Station, Rochester, N. Y.  
Seabright Dory Works, Long Branch, N. J.  
Seacraft Corp., Wilmington, Calif.  
Sea Sled Co., West Mystic, Conn.  
Smith Boat & Engine Co., C. C., Algonac, Mich.  
Smith & Williams, Salisbury, Md.  
Skaneateles Boat & Canoe Co., Skaneateles, N. Y.  
Sound Machine Shop, Inc., Mamaroneck, N. Y.  
Thompson Bros. Boat Mfg. Co., Peshtigo, Wis.  
Toppa Boat Mfg. Co., 125 Riverside Ave., Medford, Mass.  
Ventnor Boat Works, Ventnor, Atlantic City, N. J.  
Washington Knock Down Boat Co., Seattle, Wash.  
Wellin David & Boat Corp., 305 Vernon Ave., Long Island City, N. Y.  
Williams Machinery Co., Ltd., A. R., Toronto, Canada  
Wood, Inc., Gar, Detroit, Mich.



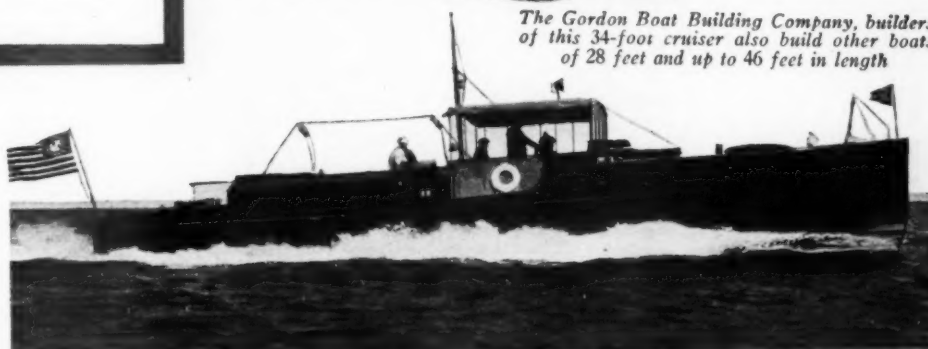
This 38-foot Standardette is the product of T. A. Kyle Company of City Island, and provides a real comfortable and livable home. It is furnished regularly with a Kermath engine and has made good under severe tests in actual service. Complete equipment is furnished with the boat and it is ready for service when received

Photograph by M. Rosenfeld



The Gordon Boat Building Company, builders of this 34-foot cruiser also build other boats of 28 feet and up to 46 feet in length

Another strong exponent of standardized boat production is the Great Lakes Boat Building Corporation, which long have been producing standardized runabouts and cruisers. Their 26-foot runabout, and the new 31-foot cruiser, as well as the larger and more substantial cruising boats, are all standardized





Photograph by M. Rosenfeld



Loud speaker plugged-in on the bridge deck through a jack mounted in the instrument board, and wired into the boat with a concealed cable leading from the receiving set

**R**ADIO equipment like anything else that is installed aboard boats should be contemplated with the idea in mind that it must be actually built right into the boat to make the most satisfactory job. In cruisers, particularly of the smaller types, everything fits just so and everything is in its place, so that the addition of any more equipment must be carefully contemplated in order not to mar an otherwise trim appearance. While it is possible to go out and buy a radio set on the market and merely set it on any convenient shelf or dresser top in the boat, still it is far more advisable to carefully consider an exact location for a radio set aboard the cruiser and then consider equipment which will exactly fit these conditions.

Regardless of where the reception of broadcast entertainment aboard the boat is desired, whether it be in the forward cabin, bridge deck, owner's stateroom, after cockpit, or wherever the yachtsman and his friends prefer to hear the music and entertainment, the radio set should be built into a sec-

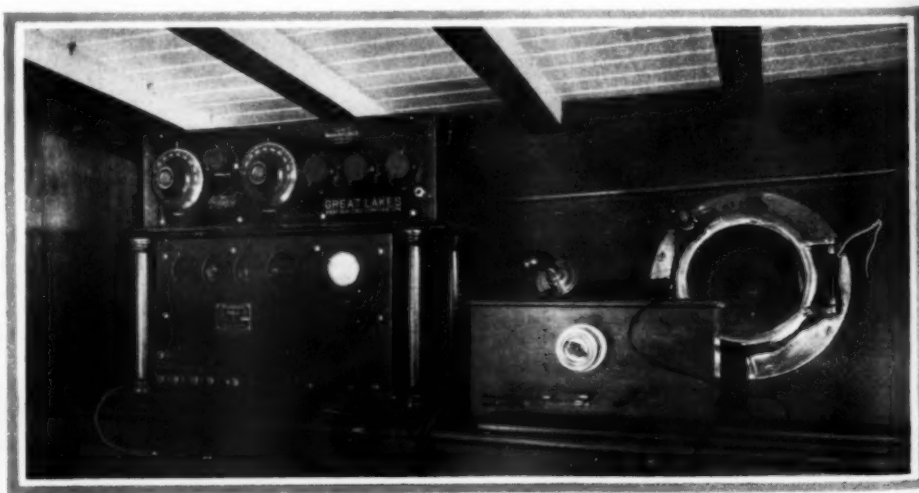
# RADIO

## A Discussion on Thorough Built-in Radio Equipment

By JESSE

tion of the boat best suited to its installation. It is very poor policy, for instance, to try to have a radio set portable aboard a boat so that it can be carried around from place to place for reception in different parts of the boat. It is not the best policy to have the receiving set located up on the open bridge deck where it is liable to injury by moisture and where it is invariably awkward appearing unless the bridge deck is enclosed with a deck-house. The same is true with the after cockpit or after deck, or any other place outside, where the set is exposed to the elements. It is desirable to be able to have reception in any part of the boat and this can be easily accomplished by a little careful wiring and still have the set permanently built into one of the cabins of the boat where it is thoroughly protected and out of the way at all times. The trend in radio in the home is to work out thorough and complete wiring arrangements whereby the wiring is concealed. The same should be especially true aboard boats. A limited space makes exposed wiring of any kind all the more objectionable in a cruiser and is really unnecessary.

Now is a good time to begin thinking about a really thorough radio installation with the fitting-out season not so far away. When the cruiser is being fitted out is the ideal time to really do a thorough job of wiring on the radio set while things are already torn up. The inclination of yachtsmen in regard to radio sets has been to place them in the boat after it is in commission, wire them up and let the wiring come as it will. Decide now upon a really good location for the radio equipment, whether it is in the forward



Complete transmitting and receiving radio equipment built into the forward cabin of a Great Lakes express cruiser. The small cabinet contains the send-receive switch and dynamotor, as well as the filament control switch

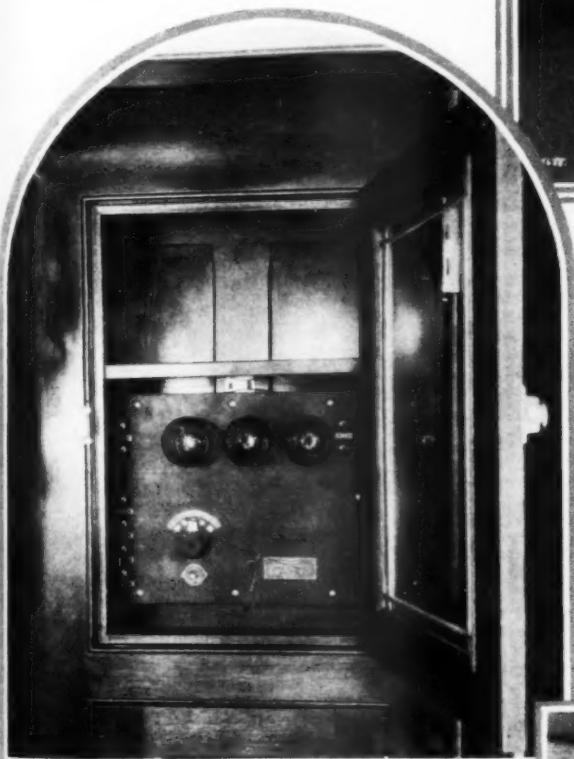
# THROUGH THE BINOCULARS

## Installation Details for Aboard Cruisers

H. JAY

cabin, after stateroom, or perhaps in the deck-house. Work out a schematic wiring diagram whereby all wiring for the radio set and its loud speaker connections will be concealed as much as possible.

First of all, put in a double line in conduit and run it next to the ribbing and planking the entire length of the boat. Bring the leads up from this line to the after deck, after cockpit, after stateroom, bridge deck, or forward



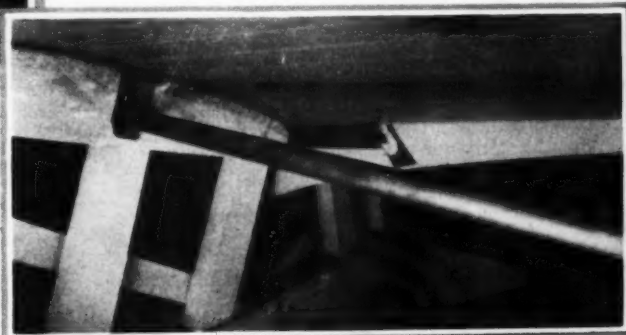
*The Western Electric power amplifier mounted in the gun locker in the forward cabin is entirely separate from the sending and receiving equipment, being remotely controlled and wired*

cabin. Where the leads come up in this conduit in the after cockpit or deck, flush mount a two-prong jack for plugging connections. In the owner's stateroom do the same—bring another two leads up connecting on to the same kind of a jack placed in some convenient spot such as dresser top or side, where a portable loud speaker can be plugged in. On the bridge deck two leads can be



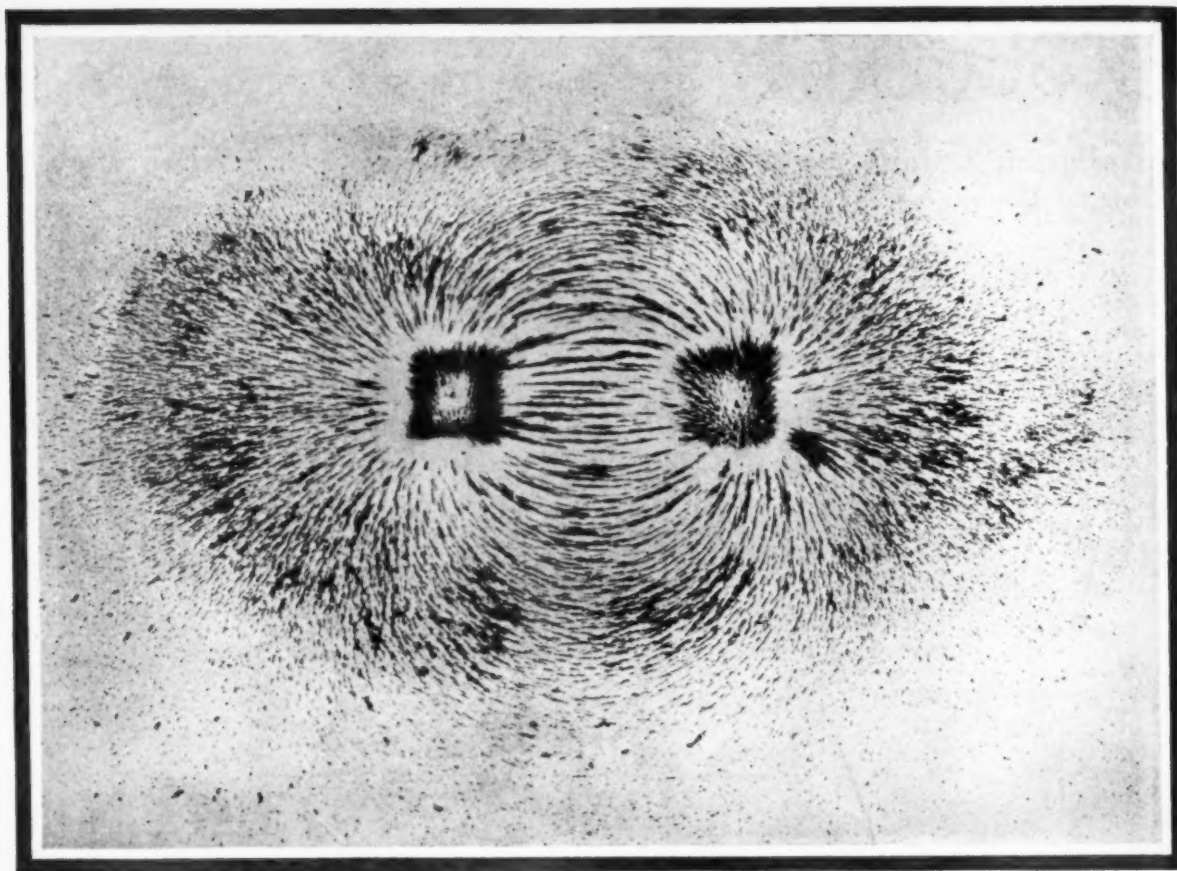
*The mast on the 54-foot Great Lakes Cruiser rigged as an antennae. The stay cables and the cable running around the yard arm, all form a part of the antennae system, which is insulated from the deck*

brought up to the instrument board where the jack can be flush mounted right in the instrument board so that the portable loud speaker can be plugged in from the bridge deck. Assuming that the set is located somewhere in the forward cabin, bring up the two end leads, fishing them in behind the planking and up in back of the set. Thus an open circuit line is carried from one end of the boat to the other and entirely concealed, whereby a number of plug-in connections are obtainable in any part of the boat where radio reception may be desired. In this way reception can be had in any part of the boat without, however, disturbing the set, which can be permanently built into a fixed and protected position. The two-prong jacks which are brought up from this line automatically short themselves out when the speaker is (Continued on page 128)



*A small section of the copper ground strip may be seen on the keel, which ran seven-eighths the length of the keel on both sides, forming an excellent ground*





*How the magnetic lines of force group themselves about the poles of a magnet. Similar forces surround the earth with the North and South magnetic poles forming the sources of magnetism. This force affects all magnetic substances and causes the compass needle to point in the direction of magnetic North at all times, subject to local influences*

## The Compass and Its Errors

**T**HE compass is an instrument so devised that it always points, with certain exceptions to be explained later, to a known spot on the Earth's surface, from which we can ascertain the direction of any other spot and lay our course to reach it. This spot to which it points is not the north geographical pole, but the north *magnetic* pole.

The simplest form of compass is a magnetized needle pivoted to revolve in a horizontal plane over a card divided into quarters marked *N, S, E, W*. According to the laws of magnetism the north end of the needle is attracted to the magnetic pole, so by revolving the card until the point marked *N* is brought under the north end of the needle our directions are known. But the mariner's compass differs from this in that the needle is attached to the card itself so that both revolve together and the point marked *N* on the card will come to rest in the direction of the north magnetic pole. This card is divided into 32 parts called points and each point into quarter points and the extreme outer edge of the card into 36 degrees. On the inside of the bowl containing the card is marked a vertical black line known as the lubber line. When the compass is placed in position

### **What Makes the Compass Point North—The Mysterious Force Surrounding The Earth Whose Influence is Always Present**

By LEWIS P. CLEPHANE

aboard ship this line and the center of the compass must always be in a line parallel to the fore and aft line of the ship and preferably on that line. In any position of the ship the lubber line must of course always be opposite some spot on the edge of the compass card, and that spot expressed in degrees or points will be the compass heading of the ship at the time.

There are two kinds of compasses in use known as wet and dry compasses. The dry compass is composed of a very light card perfectly balanced on a center pivot with small bundles, usually four, of very fine magnetized needles attached symmetrically to the under side of the card by silk threads. The card and pivot are enclosed in a brass bowl with a glass top. The liquid compass is identically the same in principle except that the bowl is filled with a liquid composed of alcohol and water and the compass card is made of aluminum while the needles are placed in tubes on the under side of the card. There are devices for always keeping the bowl full of the liquid so that there will be no bubbles. There is also an expansion chamber which compensates for changes in temperature. All mariners' compasses are hung in gimbals which are concentric rings

pivoted at right angles to each other, and this with a weight on the bottom of the compass bowl serves to keep the card level when the vessel is rolling.

Now, as has been said, the spot to which the needle points is the magnetic and not the geographic pole. The whole earth is a magnet, but the magnetic axis does not quite coincide with the axis about which the earth revolves, consequently the meridians of these two systems do not coincide but are everywhere at an angle with each other except on that meridian which passes through both magnetic and geographic poles. The angle between the magnetic meridian and the true meridian at any place therefore measures what is known as the variation at that place. Variation exists everywhere on the earth's surface except on the meridian noted above which passes through both poles. As the amount of this variation at any place is noted on all charts and as it is the same for all compasses and all headings we are not concerned with that error at present.

Deviation however is another matter and is much more complicated. The drawing away to one side or the other of the north point of the compass card from the magnetic meridian is called deviation. This is caused by the attraction of the metals of which the ship is composed, and to understand their action it is necessary to go somewhat deeper into the operation of magnetic forces. Around all magnets there is a magnetic field containing lines of force. These are the lines of direction through which the magnetic forces operate. They emanate from the poles, and in the case of the earth which is one great magnet, these lines flow from the north magnetic pole, to the south magnetic pole.

These lines are parallel to the earth only at the equator and at an increasing angle everywhere else until they become vertical at the poles. This point is very important to remember in order to understand the

action on the compass needle of the metals in various positions. So far we have only considered the action of the earth's magnetism on the needle in the horizontal plane, but this brings us also to the action in a vertical plane. If a magnetized needle is suspended from its center by a string so that it is free to move in any direction it will revolve in a horizontal plane until it points to the magnetic north. But it will also take certain positions in a vertical plane according to the latitude. If at the equator, it will remain horizontal. At the north magnetic pole it will assume a vertical position with its north end down and at the south magnetic pole a vertical position with its south end down. At any point between the poles and the equator it will be at an angle with the horizontal, increasing from zero at the equator, to 90 degrees at the poles. This angle is called the magnetic dip. The action of the needle is due to the fact that a magnet will seek to align itself not only with the magnetic meridian but with the direction of the line of force. This force tends to tilt the compass card out of the horizontal in high latitudes but that is compensated for by a small sliding weight made of copper attached to the under side of the compass card which may be adjusted as necessary.

Now any force acting at an angle, as a magnet in a line of force, can be resolved by the parallelogram of forces into two components, one acting vertically and the other horizontally. The position of a bar of iron in a line of force at the north magnetic pole will be such that the north seeking pole of the bar will be strongly attracted causing it to stand vertically. At an intermediate

point between the pole and the equator the bar will assume a position with the north seeking pole more strongly affected, and accordingly lower than the south seeking pole. The angle will depend on the relative strength of the vertical and horizontal magnetic forces at that particular point. At the equator the lines of force are parallel to the earth's surface, and the iron bar will assume a horizontal position.

On the other side of the equator towards the south magnetic pole the condition is reversed. At a corresponding intermediate point the south seeking pole of the iron bar will be more strongly attracted, and will come to rest lower than the other pole. Also at the south magnetic pole of the earth, the south seeking pole of the bar will be very strongly affected, and the bar will stand vertically with the opposite pole towards the earth.

At the poles the entire force is acting vertically, and there is no horizontal component. At intermediate points there is both a vertical and horizontal force acting. The strength of the vertical component varies as the sine of the magnetic dip at any point, and the strength of the horizontal component as the cosine of the dip.

Iron, so far as its magnetic properties are concerned, may be divided into two kinds, hard iron and soft iron. Soft iron has the quality of becoming immediately magnetized by induction whenever brought within the sphere of magnetic influence, that is whenever in the direction of a line of force, and losing that magnetism as soon as removed from the influence of that force.

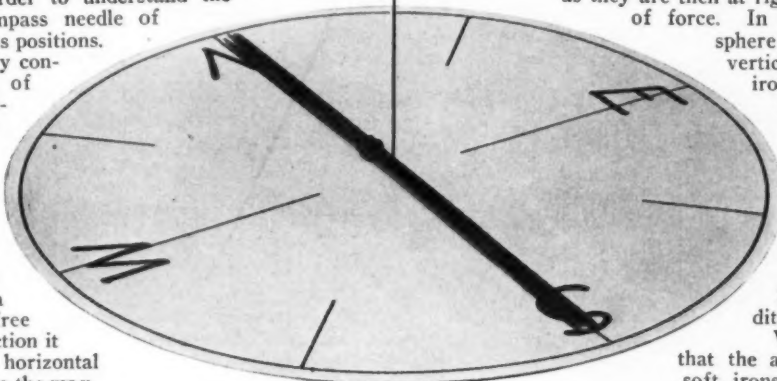
We learn that all vertical irons in a ship will receive the full force of the induced magnetism when at the north or south poles but will gradually lose that magnetism as they leave the poles in accordance with the strength of the vertical component until they cease to be magnets at all at the equator where there is no vertical component, as they are then at right angles to the line of force.

In the northern hemisphere the lower ends of all vertical or inclined soft irons will have a positive polarity and will repel the north end of the compass needle and the upper ends will have a negative polarity which will attract it. In the southern hemisphere this condition is reversed.

We will further learn that the action of horizontal soft irons is exactly the reverse of that of vertical irons. the maximum strength of induced magnetism in a horizontal soft iron occurs at the equator and it gradually lessens as the poles are reached

until at those points it is zero as there is no horizontal component left. But in the case of horizontal irons we have two situations. These irons may be considered to be divided into fore and aft irons and thwartship irons. In the case of a ship on a north or south course the fore and aft irons will be in the line of force and will be subject to the full strength of the horizontal component at that place but the thwartship irons being at right angles to the line of force have no magnetism. As the ship changes its course from north or south, however, the fore and aft irons gradually lose their magnetism until it is all gone when due east or west is reached. In the meantime the thwartship irons which had no induced magnetism on the north and south course begin to acquire it as the ship swings until the maximum is reached on an east or west course. If the ship is heading east the port ends of all soft irons will have positive polarity and the starboard ends negative polarity. On a west course this is reversed. It must be remembered that a soft iron bar only receives the full force of induced

(Continued on page 100)



The simplest form of compass consists of some magnetized needles attached to a card which, when freely suspended will point in the direction of magnetic North and South. The mariner's compass embodies the same principle but with refinements to make it practical

# BABY DOLL-26-Foot Speedster

## Complete Design and Specifications for a Unusual Type of Gentleman's High Speed Runabout with Double Cockpits

Designed Exclusively for MoToR BoatinG

By John L. Hacker

**A**MONG yachtsmen and boatmen generally it is considered an easy proposition to undertake the construction of a new boat. One hears of new boats being started or about to be started on every hand and in sizing up the prospective builder it is difficult to understand how a satisfactory job can be turned out. The construction of the boat is a difficult undertaking, and requires equally as much skill and special knowledge as any complex piece of work. In fact the building of a boat involves a knowledge of more different crafts than does the construction of most any other item. A boat builder must be an expert carpenter, an extra fine cabinet maker, a machinist, a plumber, a painter, and many other lesser crafts which are called for during the progress of the work.

The design prepared by Mr. Hacker for this issue is a very clever 26-foot fast runabout, with double cockpits. There is a small one forward to accommodate two persons, while the after cockpit is a little more roomy and will carry three. The engine is located amidships, under flush hatch covers, and when these are open the engine is accessible from every side. As this boat is intended to be a fast job, a powerful engine has been specified. The 125 h.p. Peerless engine has been called for, and is intended to drive a 17-inch diameter and 24-inch pitch propeller up to about 1,750 r.p.m. It is expected that with this motor turning at that speed, a speed of upwards of 30 m.p.h. can be looked for. For those who want even more speed than this, a 200 h.p. engine can be installed, from which a speed of close on to 40 m.p.h. will be attained.

As mentioned the construction of a boat like this is entirely too difficult a job to be undertaken by an inexperienced and unskilled amateur. It is desirable that a fine job of this sort be done in a shop which is equipped with all the necessary facilities and tools to make the work correct. A boat like this which is intended to be driven at high speeds is very sensitive to alterations in the shape of the hull and it is not recommended that any improvements over the design be attempted. There are numerous amateur boat builders who have notions about what should appear in their finished boat and we know of cases where these people have so altered a design that its own author would not recognize it. After the trials of the boat when the full realization of their mistake has been brought home to them, it suddenly develops that the design was no good. The lesson this teaches is that the designer has very good and definite reasons for laying out the hull and the underbody as he has. No alterations or changes in the design should be made without his consent. The performance of a fast boat hinges directly on the shape of its underwater portion, and the curves of the sections are to be carried out exactly as called for.

Should there be any amateur boat builders with the necessary skill to undertake a boat of this kind, they will no doubt be sufficiently well posted on boat construction not to require much help beyond that of the specifications. In general, however, it might be said that the construction follows the usual practice, and should be carried on in a building so that the work will be sheltered from the weather. The keel assembly with the stem and the transom is erected on suitable supports in the usual way and then the molds at the different stations are constructed and set in place. These must be very carefully reproduced from the data on the line drawing and the offset tables. It must be remembered that the dimensions given on the lines are to the outside of the planking, and it will be necessary to reduce the outside of the mold by the thickness of the planking. The frames are placed over temporary ribbands which connect the molds and are made of 3/8-inch white oak or ash in two parts which are halved at the chine and fastened together with copper rivets. The planking follows after the frames are all in in the usual way and can be either of mahogany or cedar, depending on whether the boat is to be finished bright or painted. The finish of the hull should also be carefully done so that the joiner work will present a creditable appearance and be worthy of the job. In constructing a hull like this the specifications should be followed very closely as practically all points are covered in detail in them. The designer has undertaken to prepare and keep in stock many of the special fittings, such as struts, rudders, etc., which are called for in this design, and they can be secured from his shops in Detroit without difficulty. Also, should any questions arise during the progress of the building which might require further explanation, a word to the architect or to the Editor of MoToR BOATING will bring the necessary information. The specifications which follow are complete in every respect and cover the entire construction of the boat.

### A GENTLEMAN'S RUNABOUT

This design is for a high class runabout suitable for a family. It is intended to be a well built and substantial hull in every respect, and is powered with a four cylinder Peerless engine of 125 h.p. This engine has sufficient power to drive this boat at thirty miles an hour or better. If desired a more powerful machine can be fitted and speeds up to forty miles can be expected if an engine of about 200 horse-power is installed. This boat is arranged to take two persons in the forward or steersman's cockpit, while the after cockpit is a little larger and will seat three persons in the thwartship seat very comfortably. The engine is installed in the space between the cockpits and is under flush hatch covers. This arrangement has proven very satisfactory in actual practice and boats built according to this plan are among the most popular which the designer has turned out.

The principal dimensions of this boat will be: Length-over-all 25 feet 10 inches, beam 5 feet 4 inches, while the draft to the center of the propeller shaft is 15 inches, the free-board at the stem is 2 feet 8 inches, while at the stern it is 1 foot 8 inches. Keel: This is to be of 1 3/8 by 4-inch white oak in one length. If not obtainable a 24-inch scarf joint with four 5/16-inch rivet fastenings should secure the parts. It is to be properly beveled and rabbeted to suit the planking. Stem: This should be prepared from a 1 3/8-inch hackmatack knee or white oak. It is to be sawn to proper shape

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(Continued on page 104)



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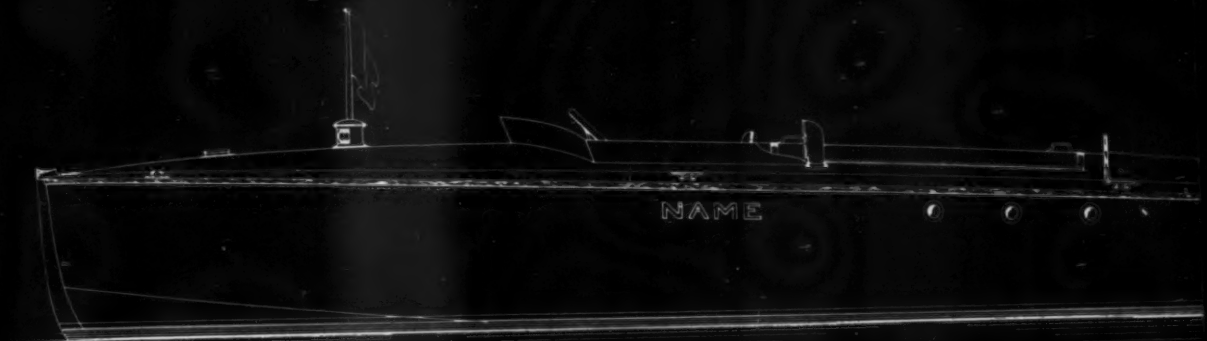
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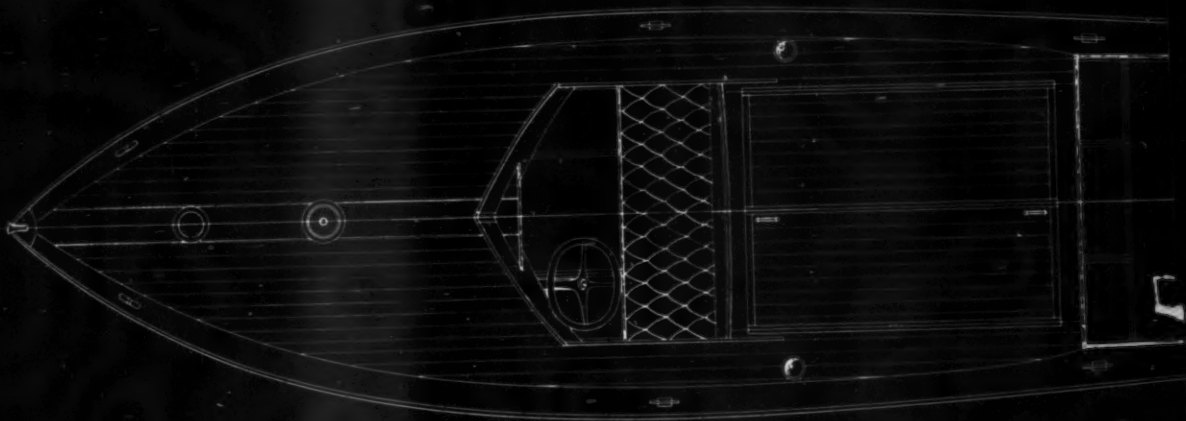


# MOTOR BOAT

## BABY DOG



"PROFILE"



by John L. Hacker



CONSTRUCTION AND DETAIL PLAN



$\frac{3}{8}$  inch = 1 foot

## Complete How to Build Plans



# SMALL MOTOR BOATS

## *Their Care, Construction and Equipment*

*A Monthly Prize Contest Conducted by Motor Boatmen*

*Questions Submitted for the May Prize Contest*

1. Describe the best and correct method of planing a boat under conditions existing in the amateur builders shop.  
Submitted by A. M., Albany, N. Y.

2. What have you found to be the most acceptable type of mooring equipment with particular reference to ease of handling from the boat?  
Submitted by T. B. K., New York, N. Y.

## Sliding Berths Are Easily Built

*Clever Suggestions for Providing Additional Sleeping Facilities on The Cruiser for the Extra Guest*

*Answers to The Following Question Published in the January Issue*

**"Explain and illustrate how best to build sliding berths in a cruiser."**

### *A Simple Sliding Berth*

*(The Prize-Winning Answer)*

**T**HE construction of an extremely simple and satisfactory sliding berth is indicated on the accompanying sketch. It shows a narrow transom with a sliding extension increasing the width, so that it may be used as a comfortable berth.

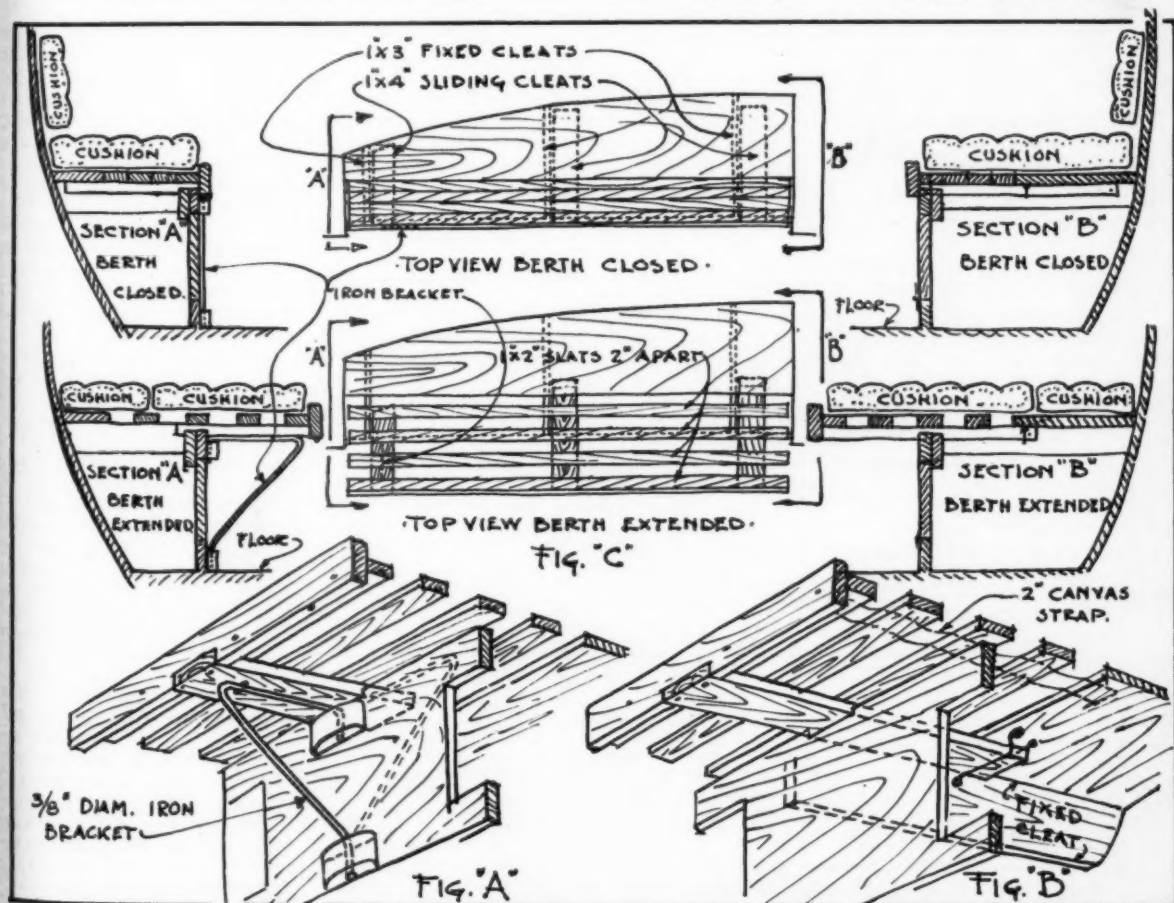
The cushions are in two sections, one of such a size as to suit the transom and the other of a size to take care of the extension.

The transom is constructed in the usual manner, except that the front section of the top is formed of a number of 1 x 2 inch slats. The number of these depends on the

size of the extension. These slats are provided with two canvas straps tacked across the slats so as to permit them to separate not more than 2 inches. The first slat is secured to three 1 x 4 inch sliding cleats, one at each end and one in the center. These sliding cleats should be of sufficient length to support the extension in the form of a cantilever. When the berth is extended the ends of the cleats are held down by the fixed boarding of the transom as indicated by Fig. B.

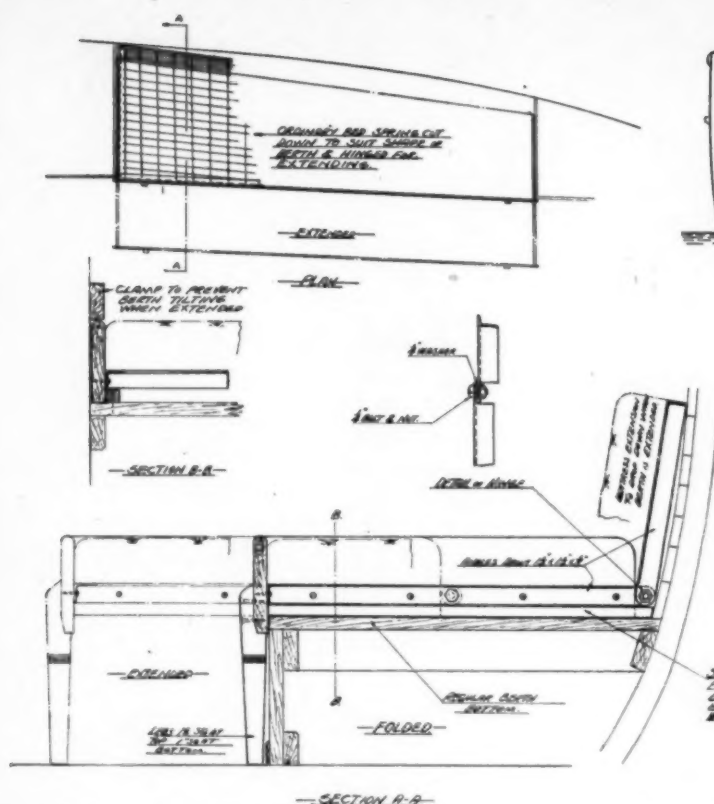
In the event of the transom being too narrow to permit this arrangement, a  $\frac{3}{8}$ -inch round iron bracket may be easily made and arranged as indicated by Fig. A.

Either, or a combination, of these methods may be used as indicated in Fig. C. A. G. W., College Point, N. Y.



A. G. W. has designed a neat and compact arrangement for a sliding berth





E. T. K. has made liberal use of steel for the framework of his supports

hard wood  $\frac{3}{4}$  x  $\frac{3}{4}$ -inch thick, about 6 inches deep, although the depth should be determined by the thickness of mattress used. The end pieces at head and foot of berth are same thickness and about 5 inches deep, rounded off on top edge to make neat appearance. The legs are hard wood  $1\frac{1}{2}$  inches square at top tapered to 1 inch square at bottoms, well scarfed at top for fastening to front of berth. If only a short extension is required, legs need not be used, as a clamp shown in section B-B can be fitted to prevent berth tilting when weight is on front of berth when in extended position.

### Metal Spring and Berth Supports

THE berths in the cabin of a small cruiser can be fitted with extensions very easily, to afford additional sleeping space, which is often required. This has been successfully tried out on a 32-foot raised deck cruiser owned by the writer and as shown on drawings.

First of all the stationary part of the berth must be built in to suit conditions, after which the wood extension frame is made up. The berth front should be of oak or other

The spring shown can be made by most any one from an ordinary bed spring. Select one with an angle iron frame about  $1\frac{1}{4}$  by  $1\frac{1}{4}$  by  $\frac{1}{8}$  inches and of good heavy wire. Cut the frame down to suit shape of berth when closed and fit the hinged piece to it as shown in detail of hinge, with a  $\frac{1}{4}$ -inch bolt, nut, and washer, between the two flanges of the angle, so same will not bend.

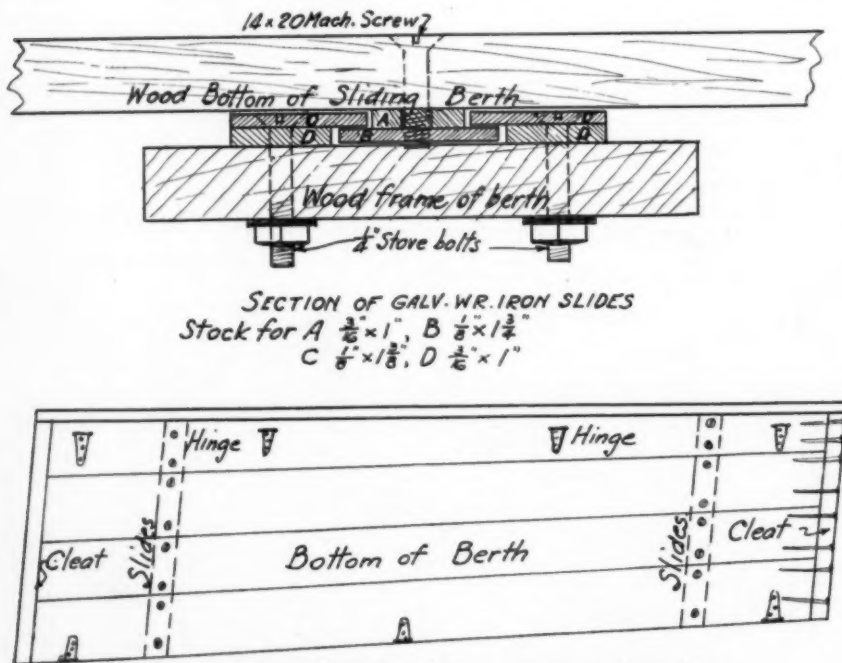
The bottom of the stationary part of the berth can be made in skeleton form to prevent spring resting down on it when it sags under the weight of the person lying thereon,

although if a heavy wire spring is selected and the top of it is kept about  $2\frac{1}{2}$  inches from bottom of berth, this should not be required.

The wire of the spring can be fitted with small wire links for its entire length where the knuckle comes when folding it. The spring is now fastened to the oak frame which really gives it most of its stiffness. A strip of hardwood about  $\frac{3}{4}$ -inch square is fitted as a slide at the fore and after ends of the berth, as shown in section B-B. This also supports the hinged section of the spring and keeps it flush with the main part of the spring when it is extended.

The sketch shows a berth with a 12-inch extension, and mattresses 3 inches thick; the extension can be made to suit the boat it is to be used on, and it is not difficult to remember that this distance determines the width of the hinged extension piece that is stowed up against the side when not in use.

E. T. K., Wilmington, Del.  
(Continued on page 86)



C. H. C. has provided a non-binding track for the berth slides

# How The Motor Should be Overhauled

*Practical Discussion Which Describes All Portions of the Engine and How Best to Keep it in its Best Condition*

*Answers to the Following Question Published in the January Issue*

"Describe or illustrate methods which should be used in giving the motor its annual cleaning and overhauling, bearing in mind faults to be remedied or stunts by which the motor efficiency can be increased."

## How to Clean and Overhaul An Engine

*The prize-winning answer*

**E**VERY marine motor, either large or small, should, during the laying-up season, receive its annual cleaning and adjusting; so as to insure against mechanical troubles next season.

The smaller motors in open boats should be removed from the hull and the overhauling done at home or in some convenient building, where heat, light and sufficient room are obtainable. In the majority of cruisers, however, it is possible and preferable to do the work with the motor on its bed, in order to save time and unnecessary work.

As the various motors, of both two and four cycle types, will require varying amounts of adjustments, cleaning and replacements, the following will give an outline of a motor receiving a thorough overhauling; and you can use any or all of the information, applying it to your motor. No matter how small the amount of work to be done on the engine, it is best to do it as soon as possible, in order that any replacement parts may be ordered early and the coming boating season not be delayed by the late receipt of some necessary repair part.

In tearing down, be sure and tag or mark all parts as they are removed, so they will go back in the proper places; and, as each part is removed, clean it thoroughly in gasoline and inspect as to its need of replacement or repair. Use a medium size paint brush in cleaning, dipped in gasoline, and wipe off with clean rags. (Rags are preferable to waste as they are less liable to leave lint sticking to rough castings, which always seem to gravitate to an oil pipe.) Unless you have a complete set of open end or S wrenches to fit every bolt and nut on the engine, by all means purchase one of the

ratchet-socket and open end wrench sets on the market, as they save your fingers, your time, as well as the bolt heads and nuts; and in loosening tight studs, bolts or nuts, use more kerosene and heat than elbow grease, and you will have less damaged ones to replace.

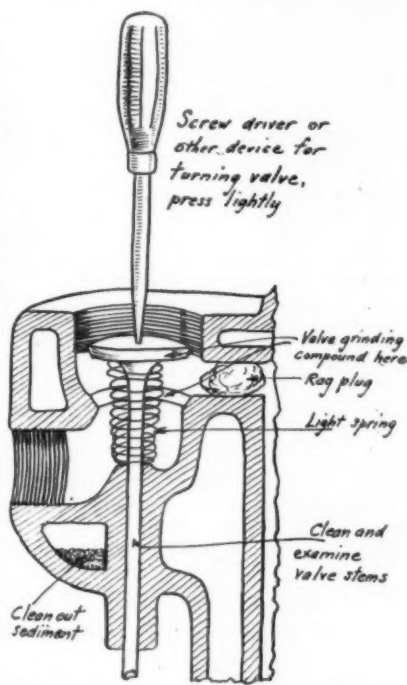
Where the motor only needs a few adjustments and cleaning, only remove such parts and equipment as are necessary to get at the parts to be adjusted, etc.

When removing gears in the camshaft or ignition assembly, see if they are punch-marked so as to go back in place and not disturb timing, and if not, mark them, with the fly-wheel set at the top of the firing stroke of No. 1 cylinder. Punch mark all connecting rod and bearing caps on the forward side, marking them No. 1, No. 2, etc.

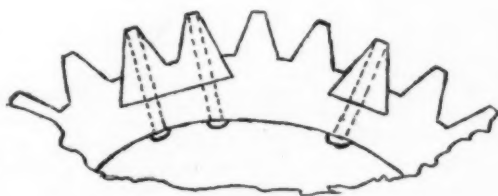
In assembling, fit all parts back to place carefully, making sure that all moving parts are snug but do not bind, fit new gaskets in place of damaged ones, and renew all damaged wiring. Use plenty of oil on moving parts when putting in place, and put a new supply in oilers, base or oil pump. As soon as the motor is assembled, with the exception of the accessories, clean the outside with gasoline and give the motor a couple of coats of engine enamel; shine up or enamel all accessories or fittings, and, as soon as dry, complete the assembly, make temporary carburetor adjustment, and the motor only needs a gradual running in and permanent carburetor and ignition adjustments when the boat goes overboard, to be as good as new.

Do not start motor until the boat is overboard a few hours, as running while the boat is blocked up is liable to loosen blocking and strain the hull. As soon as you are ready to start up, first check up the alignment, and if everything is O. K., start engine and idle slowly with plenty of lubrication, keeping your eyes and ears open for any signs of laboring, overheating, etc. If, after an hour or so running idle, everything seems to operate satisfactorily, leave boat tied to buoy or wharf, throw in clutch and make low and high speed adjustments under load, then leave motor run under about half throttle for two or three hours. On the first few runs, which should not be long ones, do not crowd the motor, rather work it in gradually, and by doing this you will find your motor performance along toward the last of the season will be much better than if you had punished it by overloading.

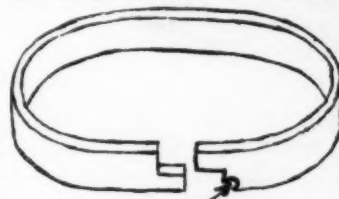
The fellow who goes to this trouble, rarely comes in on



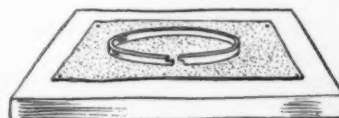
*Method of properly grinding valves and cleaning rust deposits*



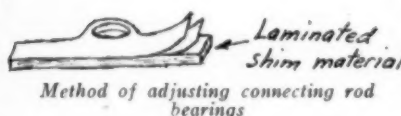
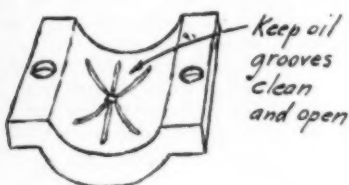
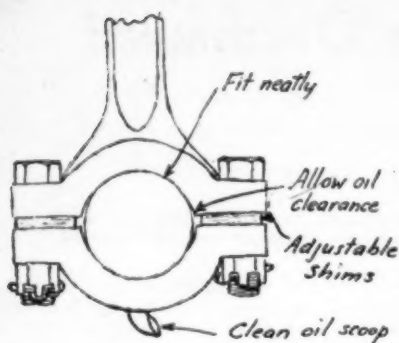
*Method of inserting new teeth on gear wheels, rivets are headed over on top and bottom*



*Pin piston rings at this point*



*Proper place to pin piston rings for two-cycle engines and method of reducing thickness*



absolutely oil and air tight, on account of base compression, and all gaskets must be renewed and put on with shellac every time motor is torn down.

#### Crankshaft

If motor has not had an overhauling for two or three seasons, it is best to remove flywheel and crankshaft for inspection; caliper all working surfaces and whenever found worn out of round, etc., correct by careful hand filing and lapping with a tool as illustrated, using valve grinding paste or ground glass and grease in the tool, then finish with fine emery cloth wrapped around shaft and rotated by a piece of cord wrapped two or three turns around it; the best method of



making this repair is to take the crankshaft to a shop and have it turned in a lathe, in which case, however, it will be necessary to renew bearings for any surfaces which have been made smaller; in case the shaft is sprung or shows signs of weakness, it is best to purchase a new one, as it is the backbone of the motor, and its failure will put the motor out of business until a new one is secured.

#### Camshaft and Assembly

Remove camshaft and test for straightness as well as evidence of wear on bearing surfaces, cams, or tappets; where any parts are found defective or excessively worn, replace with new parts, as looseness in this assembly will make a motor noisy and inefficient.

#### Gears

Test all gears for wear, chattered or broken teeth, etc., and renew or repair as per illustration wherever needed; in renewing where one gear is bad and the others more or less worn, it is best to renew the entire assembly, to avoid future trouble; in cases where the gears have made a ringing noise, bolt a circle of fibre to gear webs, as shown in sketch, and this will deaden it; in assembling, mesh gears until there is just a little perceptible motion in the gears, as setting up tight will make a growling noise and will cause

the back end of a tow-line, and I hope you never will.

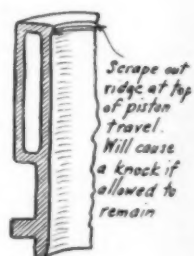
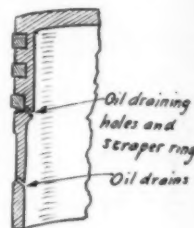
#### Crankcase

Drain out all old lubricant; clean thoroughly inside and out; clear all oil pipes by running wire and piece of rag through, or squirt some gasoline through with pressure in back of it; renew packing or worn parts and adjust oil pump; renew all crank case gaskets or washers, examine for any signs of cracks or leaks, and if any are found, repair by bolting on patch or having welded or brazed; two cycle crankcases must be

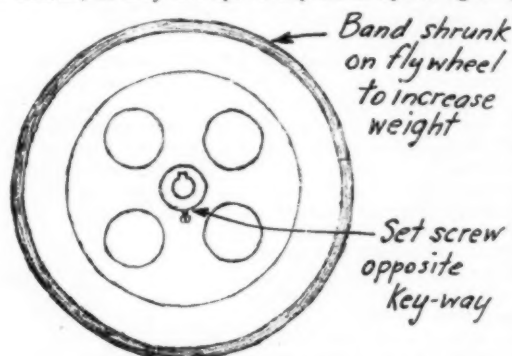
the gear train to run hot; also, do not forget to set all gears according to punch marks.

#### Bearings

Main crankshaft bearings should be tested and fitted by scraping and removing shims from between upper and lower halves until a snug fit is obtained, but do not set up tight enough to bind or bearings will run hot; scrape out oil grooves, and assemble, tightening bolts and locking with either lock washers, lock nuts or castellated nuts locked with cotter pins. In cases where babbitt is cracked in bearing, it is best to renew bearing; and, in cases where the bearings are removable babbitt, backed by bronze, this is very simple as all necessary to be done is to scrape the new bearing to a fit; however, where it is necessary to pour the bearings, it is best to have it done by a competent mechanic, in which case you will be sure of receiving a good job. Of course, you can do it yourself, if you are competent, in which case you will not need to be told as to how it should be done, and if you are not familiar with it, by all means have it done, and by seeing someone else do it and explain it to you at the same time, you can tackle the job yourself in case the necessity arises. In fitting, coat the bearing surface of the crankshaft with prussian blue, place shaft in bearing and rotate a couple of times, and where the blue is transferred to the bearing is where it is necessary to scrape until you get an even bearing, top and bottom halves, and leaving a slight clearance on the sides for oil circulation, as shown in diagram.



Lower connecting rod bearings are very apt to show the most wear, and should receive very careful attention in inspecting, adjusting or fitting. These bearings are of the split type, with shims in between the halves for adjusting, and like the main crankshaft bearings are generally of babbitt, however, in some cases as in heavy duty motors, they will be found to be of bronze, in which case, they must be adjusted to a neat fit which would be rather too loose for babbitt, as they are apt to expand at operating temper-



How to increase flywheel weight

atures, and if tight would grip and cut the shaft. Fitting, replacing, etc., is similar to the process for the main bearings. Be sure and clean out oil leads, oil grooves, and tighten bolts, then lock as with the main bearings. A fit for connecting rod bearings, lined with babbitt, is until the weight of the rod alone will cause the bearing to rotate on the shaft.

Owing to high operating temperatures under which they operate for long periods, piston pin bushings are always of bronze, and are invariably of the bushing type, which fact, in case of any perceptible up and down motion, necessitates renewal. In some cases, where the motor has not been gone over for some time, the piston pin, where it rides in



the bushing, will be found to be worn away; and this condition calls for new piston pins, as new bushings would not take up the wear, due to the pin having to be driven, end first, through the bushing in assembling. Such repairs as knurling, making a diagonal cut through with hack-saw and then contracting by driving back in rod with shims fitted on the outside of bushing, etc., can be used as a last resort; however, these repairs are only for temporary or emergency cases, and should never be left as permanent.

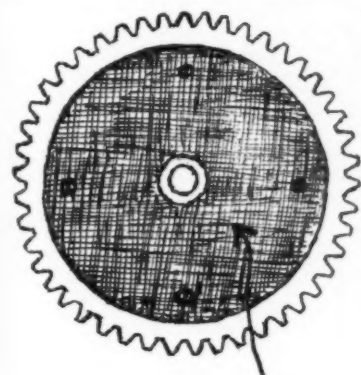
Camshaft bearings are of either babbitt, bronze and sometimes cast-iron, and are either of the split or bushing type. They should be inspected, cleaned, adjusted or renewed, as the case may be, and the assembly made.

All bearings should be inspected for end play, particularly on the main crankshaft bearings, in order to eliminate all pounding; however, on the piston pin bushings there is considerable end play to take care of rod angles and piston motion in cylinder bore.

When fitting new shims, as in new bearings, make them of metal; as, ones made of cardboard, leather, etc., are liable to become oil soaked and allow the adjusting half of

the bearing to become loose, which will result in bolts being sheared off.

In two cycle motors the main crankshaft bearings are of either babbitt or bronze and of either the split or bushing type; however, they must be made a very tight fit, in order to hold crankcase compression, which is so vital to the satisfactory operation of this type of motor. The lower connecting rod bearings should be fitted with just a



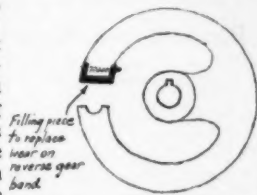
Fibre ring bolted on to deaden ringing of gears

slight perceptible up and down movement, or they will run hot and burn out. These connecting rod bearings are of either babbitt, or bronze, and are of the split type with adjusting shims between the halves.

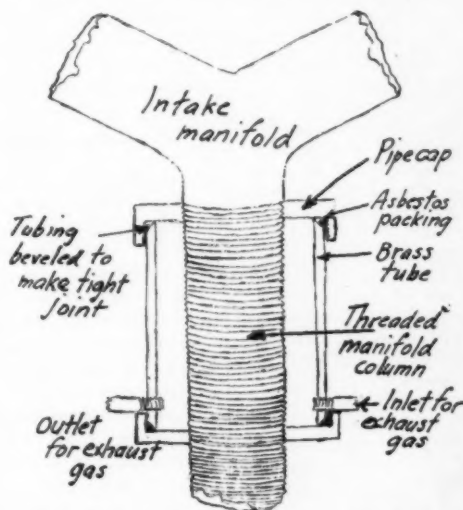
#### Pistons, Rings and Piston Pins

Clean pistons, and inspect as to evidences of blowing by, which is noticeable by the dark colored burnt appearance, which may be due to rings stuck, slots worked around until they are in line, rings worn, cylinder bore worn or scored, or piston warped out of round; and, as the fault is found, that is the thing to be remedied. Pistons which have a decided rocking motion in the cylinder, will cause piston slap, and excessive wear, therefore, they should be renewed, as well as the cylinder ground so it will be true. In cleaning pistons, remove the rings from grooves, and clean the grooves out thoroughly, then place the old or new rings back in position. When assembling, coat pistons and rings with lubricant; and, where trouble is found in getting rings to compress sufficiently to enter cylinder bore, first make a noose of strong fishing twine, place this loop around first ring to be entered, draw tight until the ring is fully compressed, tap piston with block of wood, and

where the rings have been correctly fitted, the ring will slide into the bore with no further trouble; the noose is then slipped over the next ring in turn, and so on until they are all in. In fitting new rings, micrometer (or have it done) the cylinder carefully, and get rings from one to two thousandths oversize, measure width and depth of groove, making sure to get the correct width of ring face, as rings too loose in groove will allow leakage in back of them, and will in time become stuck by oil and carbon deposits. Where the new rings are too tight in groove, ease off by tacking a piece of emery cloth to a piece of board, laying the ring flat on the emery cloth, and working around in a circular motion, thereby doing an accurate job, as shown in sketch. There should be about one sixty-fourth of an inch gap in the ring cut; however, most ring manufacturers will specify the correct gap, and will illustrate as to how the cut is to be filed, therefore, whatever they tell you is correct and that you should follow. Piston pins should be renewed if found worn on bearing surfaces; and,



Repair to reverse gear expander by addition of filler on one end



Method of providing a hot spot on intake manifold to insure better vaporizing of low grade fuels

in assembling, should be securely locked into position, in order that they will not become loose and score cylinder bores. In cases, however, where the pins are of the floating type, capped with bronze, or with a piston ring covering end of pin, this is not necessary.

In two cycle engines, the pistons have a baffle plate on the top, which must be fitted so it is next to the intake port, in order to deflect the gases in such a manner as to aid in scavenging the combustion chamber; so don't forget this fact when assembling the motor. The pistons and rings must be a tighter fit in this type engine in order that leakages from the combustion chamber to the base, or vice

(Continued on page 86)

#### Rules for the Prize Contest

ANSWERS to the above questions for the May issue, addressed to the editor of MoToR Boating, 125 West 40th St., New York, must be (a) in our hands on or before March 25, (b) about 500 words long, (c) written on one side of the paper only (d) accompanied by the senders' names and addresses.

The name will be withheld and initials used.

QUESTIONS for the next contest must reach us on or before March 20. The editor reserves the right to make such changes and suggestions in the accepted answers as he may deem necessary.

The prizes are: For each of the best answers to the questions on page 33 any article or articles sold by an advertiser advertising in the current issue of MoToR Boating of which the advertised price does not exceed \$25, or a credit of \$25 on any article which

sells for more than that amount. There are two prizes — one for each question — but a contestant need send in an answer to only one if he does not care to answer both.

For answers we print that do not win a prize we pay space rates. For each of the questions selected for use in the following month's contest, any article or articles sold by an advertiser advertising in this issue of MoToR Boating of which the advertised price does not exceed \$5, or a credit of \$5 on any article which sells for more than that amount.

All details connected with the ordering of the prizes selected by the winners must be handled by us. The winners should be particular to specify from which advertisers they desire to have their prizes ordered.



# Winter Cruising

*Pleasure and Knowledge to be Gained by Study Over The Drawing Board and Charts  
—Courses and Ranges for Summer Cruises Prepared in Advance*

By H. R. Stiles

**Y**EARS ago when I was doing a lot of cruising in small boats single-handed, I found myself more than once in situations where leaving the barkie to herself and plotting a course was out of the question, and when it would have been like flowers in Spring to have had what I needed on the chart where I could have gotten it at a glance. So I went about putting it there one winter, and worked up a set of charts for the next season's use which proved so satisfactory that I have been doing Winter Cruising, as I call it, ever since, and preparing charts which make me practically independent of reference books and reduce the use of the rule and dividers while under way to an absolute minimum. No doubt most men who are their own skippers do the same sort of thing, but I have seen so few charts completed as I like them for my own use that I have been tempted to bring the results of my experience to the attention of fellow-cruisers.

The work will call for the use of parallel rule or protractor, dividers, drawing and lettering pens, pencil, eraser and red and black waterproof drawing ink. The best parallel rule is the hinged or so-called Sigsbee pattern, which can be jumped on the chart without sliding. Such a rule is more expensive than the usual type but is worth more than the difference in cost, for it saves a tremendous lot of active and passive profanity. The transparent celluloid protractor with straight-edge fast to its center seems to be replacing the parallel rule and is very convenient. My experience with it, however, makes me suggest that if you intend to use one and are not familiar with it, practice with it a bit before beginning to do work for record, and check yourself by setting the instrument on some point to which you have already found a course, make a back reading to the point from which the course had been determined and see if you get the exact reciprocal of the course first gotten. The result may surprise you now and then. A sharp steel pen point is the best for lettering. Art gum makes the best eraser.

For the data needed to make the work complete one must have the Coast Pilot, the Light List and Tide Tables. Bring the Coast Pilot up to date by cutting out the changes from the weekly Notices to Mariners which can be had for the asking from the Coast & Geodetic Survey, and pasting them in their proper places in the book. Use new charts. Ink is liable to run on the surface of a chart which has lost its finish and the advantage of having fresh, clean, up-to-the-minute charts much more than offsets their very moderate price.

Begin the work with your own home port. Read over the sailing directions from the Coast Pilot for the course to be run from the usual anchorage to sea. Then using your rule or protractor and pencil, plot and draw in each leg of the course. If the course makes a change in direction and bearing from a mark ashore or from a range, prolong the course as a dotted line to the mark or range and note on this dotted prolongation the bearing and distance of the

mark or range from the point where the course makes its change in direction.

Note on each leg in pencil its compass-bearing as taken from the compass-rose and its length, which is easiest gotten by taking a unit of distance in the dividers from the scale of the chart or from the latitude-scale on its right and left margins, and stepping it into the course-line. There will usually be a remainder. Take this in the dividers, go to a subdivided unit of your scale with it and get its length, which will be in tenths on the latitude-scale and quarters and fractions on the chart-scale.

When the work on this course is all pencilled in, draw in the bearing lines and note the bearing and distance of every mark and buoy in or near the port from all other marks and buoys in relation with it. Then using the drawing and lettering pens, ink in the work you have completed in pencil.

I prefer red ink for this as practically everything on the chart is black and there can be no confusing your red notations with anything else on it. Make the lines solid and as fine as possible without sacrificing legibility. It is a good plan to leave a short space between the end of each line and the mark it runs to especially if several lines converge to the mark, for there will be danger of obscuring the mark by the meeting of the lines when they are inked.

Put the notations of courses and distances with the figures actually resting on the line to which they refer. If this is not done there may be some question as to which line they refer to when several lines lie near each other. If a course or bearing line is too short to take the notation as to course and distance, make the necessary notations in any clear space near it, inclose them in brackets and connect the brackets with the line by a red

line, best drawn waved to dodge markings on the chart and to show that it is not a bearing line.

It is so easy to get a back or reciprocal bearing that it is a waste of time and labor to note more than one bearing on a course. If you are using points, change north to south, south to north, east to west and west to east and leave the fraction of a point, if there is one, as it was. For example: NW  $\frac{1}{2}$  W would be SE  $\frac{1}{2}$  E; SW  $\times$  W  $\frac{3}{4}$  W would be NE  $\times$  E  $\frac{3}{4}$  E. If degrees are being used it is merely a matter of adding or subtracting 180 degrees.

When all the course and bearing lines in or about the port have been inked and marked, draw a short red line under the number of each red buoy, a short black line under the number of each black buoy and a short red line with a black line under it under the number of each red and black buoy. This will attract attention to the buoys and give you the colors and numbers of them at a glance. Their numbers are often printed in the midst of a mass of stipplings and soundings and are not always easy to find. Spindles may be indicated in the same way.

Then using the Light List as a reference, make notations  
(Continued on page 132)

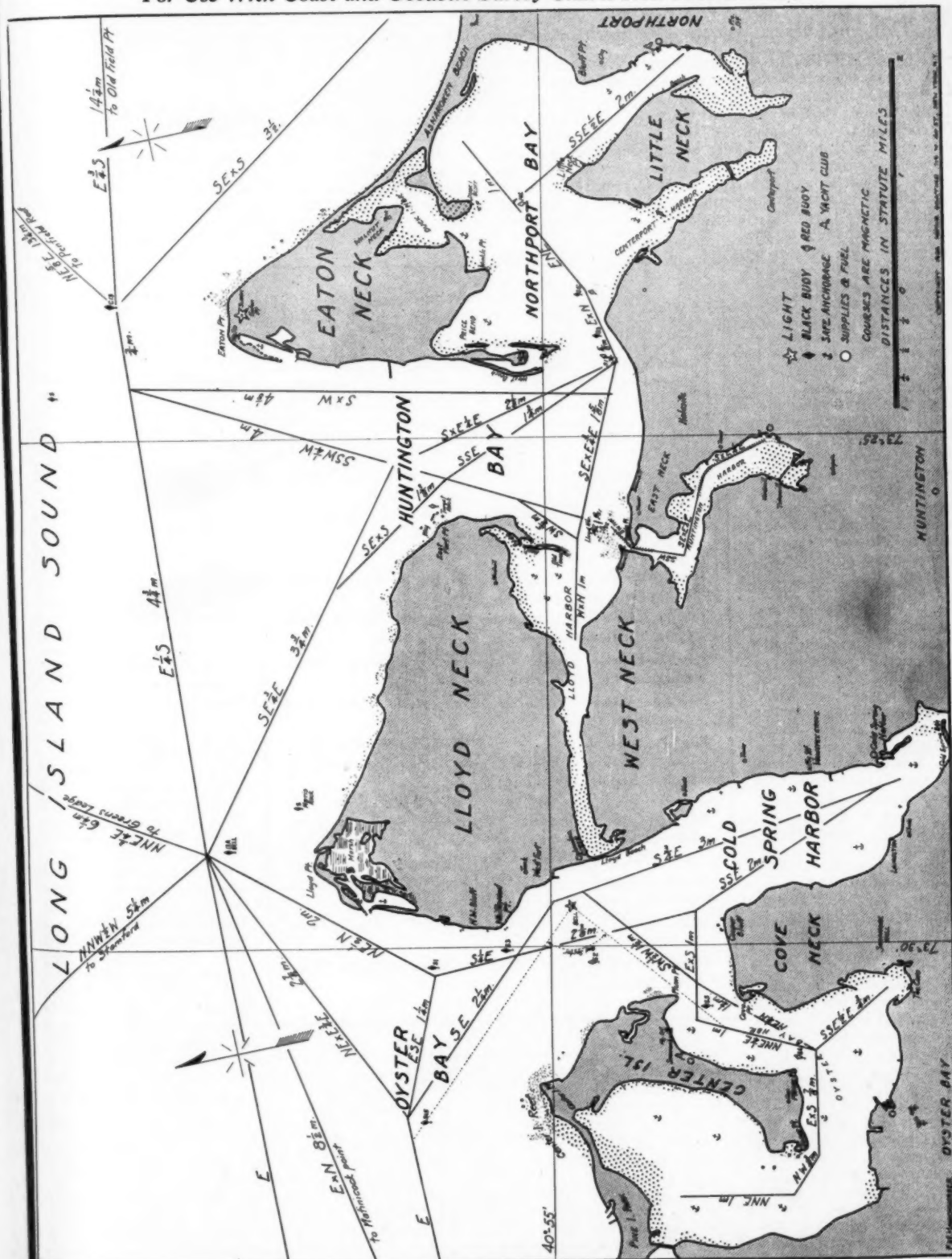
## On Improving Charts

**F**OR years MoToR BoatinG has been publishing a monthly chart of waters covering practically the entire Atlantic coast and lakes. These have embodied most of the detail which Mr. Stiles recommends in his article. Owing to their reduced size it is not possible to supplement them with all the data referred to here. The boatman who wishes to use his winter evenings to the best advantage will take most of the suggestions made and prepare a number of large scale charts of his own local waters which will contain all the data and references called for in the zone they cover. The supplementary information added to the government charts according to the advice and suggestions given here will make them of irreplaceable value and once used their value will make them indispensable.

Editor

# Motor Boatmen's Chart No. 52—Long Island Sound Oyster and Huntington Bays

For Use With Coast and Geodetic Survey Charts Nos. 1213 and 224



# Better Boats to Race

**Important Changes Made in Rules for Sweepstakes Class Which Will Permit Boats of Varying Sizes and Powers to Compete—A 150 Mile Event with 30 Miles of Course Laid Out in Open Water—American Power-Boat Association Rules to Be Used**

A COMMITTEE of the Yachtsmen's Association of America, consisting of Edsel Ford of Detroit, Sheldon Clark of Chicago, H. B. Greening of Hamilton, Colonel T. A. Duff of Toronto, Colonel J. G. Vincent of Detroit and C. F. Chapman of New York were appointed at a meeting last fall to draft recommendations for the rules to be used for the Sweepstakes Class in the 1925 event. It will be remembered that it is required that all rules shall be adopted and announced at least eighteen months before they are put into effect. Therefore, there can be no change in the rules for the 1924 race which will be held at Detroit on Labor Day. As in 1923, this year's race will be 150 miles in length and open to legitimate runabouts of more than 25 feet waterline length, 5 feet beam, powered with motors of not more than 1350 cubic inch piston displacement except that runabouts powered with a standard Liberty engine of 1650 cubic inches will be allowed to compete provided the hull is at least 32 feet in length by six feet beam on the waterline.

The 1925 Sweepstakes event and those subsequent thereto, will be run under rules which in many respects are considerably different fundamentally from anything ever before attempted. The greatest change perhaps, provides for a piston displacement proportioned to the boats' length, so that a craft with a moderate size motor can race with larger craft with more engine and have a fair chance to win. For a 25 footer the largest allowable engine will be one of about 825 cubic inches, which is equivalent to a 6-cylinder 5 x 7. A 32 footer can carry 1650 cubic inches, which means a Liberty, a 35 footer, 2256 cubic inches and so on.

In coming to the conclusions for future races, the Committee considered the reasons for the Sweepstakes race's existence from every angle and decided that if the race is to live, it would be necessary to change it considerably, fundamentally. As has already been announced, the cash prize idea has been abandoned for future contests and trophies substituted. In addition, a certain amount of expense money will be allowed those boats which finish, same to be divided equally among the contestants, irrespective of their position of finish.

The Committee, in formulating the new rules, believed that the purpose of the race was not to develop an out and out speed boat with speed paramount, and all other particulars such as seaworthiness, utility of boat, comfort of crew,

dryness, etc., sacrificed to a more or less degree. The Committee believed that every effort should be toward the development and perfection of the so-called gentlemen's runabout, that is: a craft whose extreme speed is of secondary importance; a boat which is useful, serviceable, dry and seaworthy under average conditions where a runabout is to be used. Furthermore, they believed that a type of boat should be selected which would be of interest to persons from different localities such as the Atlantic Coast, Buffalo, Detroit, Chicago, the Mississippi Valley,

Pacific Coast, Inland Lakes, etc. In coming to these conclusions, the Committee had in mind certain failures of the boats which raced in the 1923 Sweepstakes as well as the poorer qualities of some of the boats which have been developed as the result of the rules for the Gold Cup contest.

It is a fact that there are a large number of men financially able to build racing craft and many who have shown a whole lot of interest in racing Gold Cup boats but many of these—immediately lost interest when it was brought to their attention that most races as they have been arranged during the last few years, have been for small craft, 26-footers and smaller, powered with motors up to 200 h. p. The boats which have been racing during the last few years—while a decided improvement and development over the older racing boats, particularly the hydroplanes, have been of little or no use except in certain localities, generally in those particular localities where the race meet in question has been held. For example, a 26-foot Gold Cup boat is of little or no use in waters around New York City, on Long Island Sound, and on similar waters. Many men would be interested in building boats of around 30 or 32 feet in length, properly

powered, so as to give them speeds up to 50 m. p. h. which is the average speed of a Gold Cup boat, today. However, most of these men are not interested in such a craft as small as a 26-footer.

Much has been said about the wonderful boats which have been developed as a result of the Gold Cup requirements and particularly those craft which raced for the Gold Cup at Detroit last summer. Yet, while the boats have been fast there is no denying the fact that they have been out and out racing craft and without any exaggeration it can be stated that they are very treacherous boats to ride in

(Continued on page 122)

## Important Events, 1924

**March 7 and 8—Annual Southern Regatta, Flamingo Course, Miami and Miami Beach, Florida. (All races two heats.)**

2:00 P. M.—Express Cruisers and Chance Race.  
2:35 P. M.—Gentlemen's Runabout Class, 30 miles.  
3:25 P. M.—Hydroplane Class, 20 miles.  
4:00 P. M.—Sweepstakes Class, 40 miles.

**March 15 and 16—Regatta of Habana Yacht Club, Havana, Cuba. (Same classes as at Miami.)**

**April 25-27—Regatta New Orleans Speed Boat Association. Lake Pontchartrain, La. Mississippi Valley Power Boat Association.**

**June 20-22—New York to Atlantic City and return race. Columbia Yacht Club, New York, N. Y.**

**July 3—Express Cruiser Championship, Middletown Yacht Club, Middletown, Conn., to Sachem's Head.**

**July 5—Express Cruiser Championship, Sachem's Head, Conn., to Lloyd's Harbor, Long Island.**

**July 3-6—Annual Regatta, Mississippi Valley Power Boat Association, Oshkosh, Wis.**

**July 31—Long Distance Ocean Championship for James Craig Trophy, Columbia Yacht Club, New York, to Shelter Island Yacht Club.**

(Course outside Long Island)

**July 31—Cruiser Race for MoToR Boating Trophy, Long Island Sound, Orienta Yacht Club, Mamaroneck, N. Y., to Shelter Island Yacht Club.**

**August 2—Handicap Cruiser Championship of America, Shelter Island Yacht Club.**

**August 14-16—Annual Regatta of Buffalo Launch Club, Buffalo, N. Y.**

**August 30-Sept. 1—Annual Gold Cup Regatta, Detroit Yacht Club, Detroit, Mich.**



# Dependable Power Plants Drive Fine Boats



A high speed limousine runabout built for Thomas N. McCarter by the Red Bank Yacht Works from designs by J. Murray Watts. This boat is 20-feet in length and equipped with a six cylinder Scripps engine, which drives her 22 miles. She is used for fast ferry service from the Shrewsbury to New York

*The Popularity of the Scripps Four and Six Cylinder Engines for All Types of Speedy Boats Shown by Its Adoption by Many Builders of Standardized Craft*

Starlight is a fine 38-foot cruiser owned by W. H. Sterling of Brooklyn, and powered with a model E Scripps marine engine. In competition last summer this boat was successful in winning many long distance races in all of which the engine performed with absolute regularity and uniformity under severe tests



## Improved Boat Plumbing

*An Electrical Device Which Eliminates Many Annoyances of Motor Boat Cruising*

**Y**ACHTSMEN who have enjoyed the pleasures of Motor Boat Cruising will experience a sense of relief in learning that after many years one of its few disagreeable features may now be eliminated by using an electric flushing toilet instead of the old type of lever pumping mechanism.

This electric flusher has been recently invented and developed by a prominent boat building organization. The demand for such a device has been persistent and is of such importance that designers were set to work, some two years ago, in an endeavor to perfect something that would satisfactorily fill this much needed requirement of boat owners.

After a long series of tests, modifications and changes from the original model, followed by a thorough practical test, the device has been proven successful and a marketable product. It operates on a six volt storage battery, a size which forms part of the equipment found on every modern cruiser. It dispenses with the pump handle, with its valve and springs, always a source of constant annoyance in getting out of order.

This flusher is rigidly held in a bronze casting in which a six volt electric motor is mounted. The shaft of this is

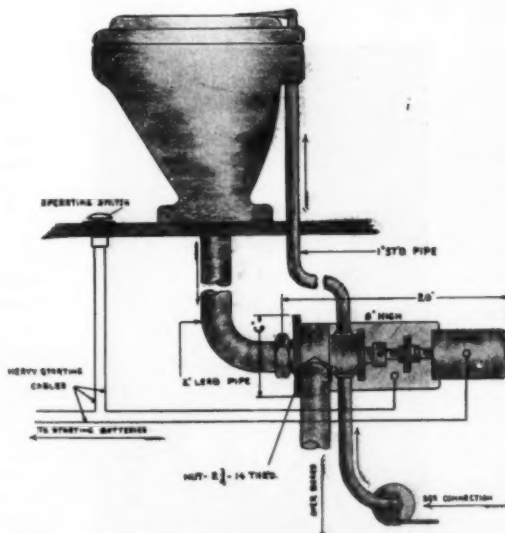


Diagram showing the connections and arrangement of the electric flushing device

extended by a flexible coupling, and continuing through forms a shaft for the water pump and rotor. The water pump and rotor while each are separate units, are mounted integrally and form a combination in which all valves and springs have been eliminated.

The electric operating push button may be placed either in the floor or mounted on the wall along side the fixture or elsewhere as dictated by the available space or as most convenient. By making the electric connection, sea water is pumped through the fixture and discharges again into the sea. In appearance the installation is much the same as the modern domestic fixture. The motor and pump does not necessarily have to be located near the fixture. In very small boats, it may be placed in any convenient location, even at a considerable

distance from the fixture.

It is adaptable for all boats supplied with six volt current, and for use on boats of all sizes up to 80 or 100 feet in length. The use of this device for over a year in practical service on board yachts, warrants the builders in placing them on the market with the full knowledge that they will fill a long felt need, and prove entirely satisfactory.



# Yard and Shop

Notes of Interest to Both Owner and Manufacturer

## Red Wing Red Top

THE most recent achievement of the Red Wing Motor Company, manufacturers of the Red Wing line of Thorobred marine engines, is the new 50 h.p. high speed Red Top model. This engine was shown for the first time at the recent Motor Boat Show in New York, and it attracted an unusual measure of attention. The engine on display was sold on the spot and numerous orders for early delivery of similar machines were secured. In appearance the engine is very similar to the old reliable model B 32-40 h.p. Thorobred, since a number of exterior castings use the same patterns. The high power which this engine is able to develop, is due directly to the use of correctly proportioned light weight reciprocating parts and a higher compression ratio. A double ignition with two sets of spark plugs are fired simultaneously by a dual spark Robert Bosch magneto. This, together with the use of the new and improved model S Schebler carbureter, gives maximum efficiency at all engine speeds up to 1,800 r.p.m., at which speed the engine runs quietly with no perceptible vibration.

The new Red Top is a complete unit power plant with aluminum crankcase, oil pan, reverse gear cover, and hand hole plates, which all help to bring the weight down to 650 pounds. The bore and stroke is 4½ by 5 inches. The crankshaft is 2 inches in diameter and is supported by ten lineal inches of bearing surface. Lubrication is by pressure feed. Further particulars and illustrations of this interesting machine will be sent to anyone wishing it, by the Red Wing Motor Company, Red Wing, Minnesota.

## Radio for Small Boats

Owing to the continuous and persistent demand for a special radio receiving outfit suitable for use on small motor boats, which the E. J. Willis Company have been receiving during the last several months, they have decided to establish a department to cater to this need. Accordingly they have been conducting some experiments, and have recently perfected a receiver which they believe is the most practical outfit for small boat installation. It is peculiarly adapted to use on motor boats, where the conditions are not quite the same as they are in homes and elsewhere, and their experiments have



The exhibit of L. W. Ferdinand & Co. at the recent Motor Boat Show in New York was a remarkable demonstration of the value of the various grades of marine glue which they make. The famous Dory which has been waterproofed by their process was also on display, and attracted its share of attention

shown it to be remarkably successful.

In order that this department may be on a par with the rest of the organization, B. Bernstein has been placed in charge and will manage this department in person. Mr. Bernstein is the inventor of the Air-O-Phone and has also done the experimental work on the receiving set mentioned before. Instruction or assistance in the design or building of sets will be cheerfully given by experts or by Mr. Bernstein in person.



J. R. Bardsley of Yonkers, N. Y., is the lucky winner of the 16 h.p. Kermath engine which was awarded in the contest at the Motor Boat Show. His estimate of the average cost of repairs per year for over 14,000 Kermath engines was \$1.68. His new engine will be installed in his 20-foot cruiser

In discussing the new department with Mr. Willis, he informed us that he intends to carry one of the largest stocks of radio parts and complete sets in lower New York, and that this vast display will await the inspection of the yachting public at prices which will startle and please at the same time.

## Cruising to the South Seas

Not long ago the schooner yacht Wanderer was laying along side of T wharf loading supplies and preparing to sail on a long pleasure cruise to the South Sea Islands. This schooner, owned by R. W. Allen of New York, was built at Essex from

designs by W. H. Hand, Jr., and is one of the most costly yachts ever built by the James yard. The vessel is equipped with complete and powerful electric apparatus, which supplies power for all auxiliary machinery. Among the supplies which were loaded aboard was a liberal stock of New Jersey copper paints, which were taken along to insure complete protection to the ship's bottom when in the tropical waters in which she will cruise. It is well known that the warm waters of the tropics are particularly infested with destructive worms of a size and ability unknown in the north. For this reason it is highly essential that the protective bottom paint be carefully chosen in order to prevent destruction of the timbers.

## Evinrudes in Canada

Announcement has just been made of the appointment of J. W. Magnus, 131 Front Street, W., as the Toronto Representative of the Evinrude Motor Company, Milwaukee, Wisconsin. Mr. Magnus has had fifteen years experience with boats and marine engines in both the production and selling ends of the business. For six years he was superintendent of works for the Gidley Boat Company. Mr. Magnus will carry in stock the complete line of Evinrude Motors, including the Sport Twin, the 2 h.p. Single, the Big Twin and the 1 and 2 cylinder inboard models.

## Of Interest to Racing Skippers

There has long been a demand for a soft yet super-strong Yacht Rope, from the yachtsman not contented with Manila or Italian Hemp.

(Continued on page 68)

## First over the line—with Valspar!

**T**OUGH weather and the course scarred with drifted "hummocks" of snow and ice! But the sturdy ice craft built by Evinrude negotiate the heaviest going that Lake Geneva can provide.

Writing about the fine records these champions have made at many an ice yachting regatta their builders say:

"Besides making such a creditable showing for speed, these boats have been particularly commented upon for their splendid appearance, attributable, of course, to first class workmanship and Valspar.

"We have built quite a number of additional boats, all of them Valsparred, which ought to give good accounts of themselves in this year's racing."

Valspar gives the maximum of beauty, durability and protection. Ice, rain and snow, sun and storm—none of these can injure Valspar. Its supreme waterproofness and elasticity make it by far the best varnish for marine purposes.

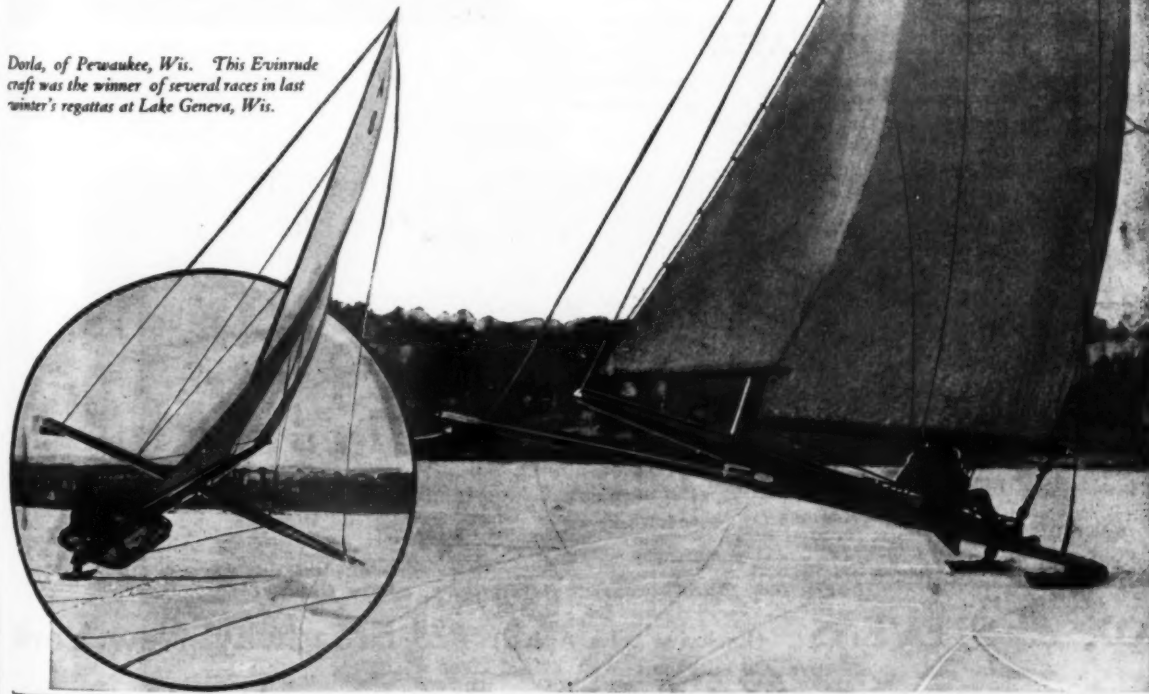
*Anything that's worth varnishing is worth Valsparing*



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*Dolla, of Pewaukee, Wis. This Evinrude craft was the winner of several races in last winter's regattas at Lake Geneva, Wis.*



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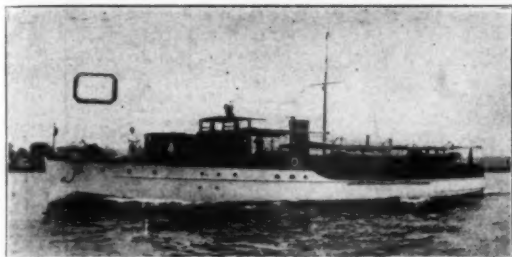
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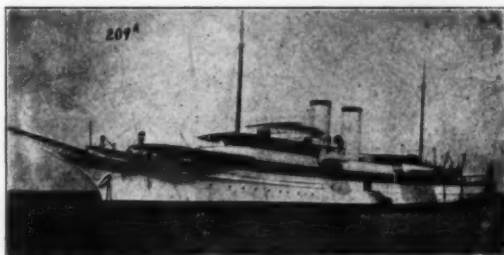
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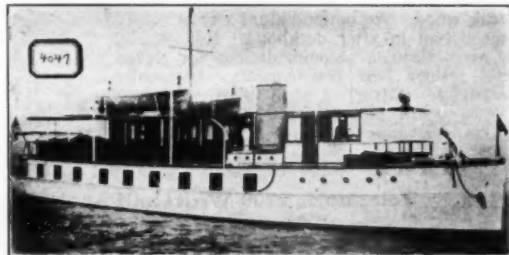
On this page are shown a few representative yachts selected from our large lists. Should none appeal kindly acquaint us with your requirements. Full information regarding costs to build, purchase or charter yachts of all types gladly furnished.



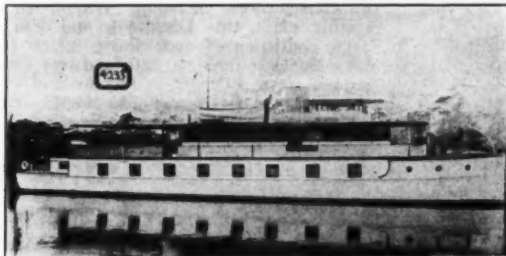
No. 4164—For Sale—Up-to-date 93 ft. twin-screw cruising motor yacht. Built 1921. Construction unusually heavy and of highest class. Speed 12 to 14 miles; two 80-115 H.P. Winton motors. Dining saloon in deckhouse forward; two double and one single staterooms, bath and two toilets below aft. Able, handsome, comfortable cruiser. Interior finish mahogany and ivory enamel. Cox & Stevens, 25 Broadway, New York.



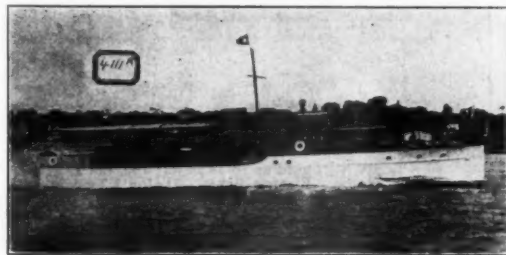
No. 209—For Sale or Charter—Large, sea-going steam yacht. Palatial accommodation. Unusual opportunity. Several similar larger and smaller available craft. Cox & Stevens, 25 Broadway, New York.



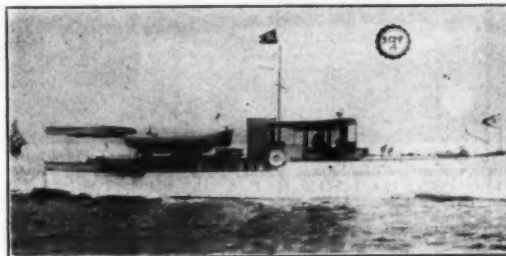
No. 4047—For Sale or Charter—Twin screw motor houseboat, 85' x 18' x 3.3' Winton motors. Four staterooms, two baths and three toilets below. Deckhouse 25' long, containing combination dining saloon and living room. Luxuriously fitted and furnished. All conveniences. Cox & Stevens, 25 Broadway, New York.



No. 4233—For Sale or Charter—Practically new, twin screw motor houseboat, 100 ft. x 20 ft. draft. Speed 10-11 miles. Exceptional accommodation includes five staterooms, three bath and toilet rooms. Dining room and library in deckhouse. Tastefully furnished throughout. Large deck space. Best large houseboat available in Florida waters. Cox & Stevens, 25 Broadway, New York.



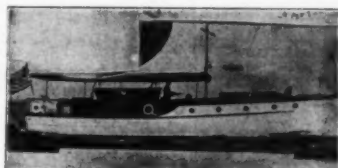
No. 4111—For Sale—Modern, twin-screw motor yacht, 73' x 12'-9" x 4'. Built 1921. Speed up to 15 miles, two 6 cylinder 175 H.P. Sterling motors. Dining saloon, two double staterooms, bath and toilet room. Enclosed bridge. Excellent condition. Price reasonable. Cox & Stevens, 25 Broadway, New York



No. 3529—For Sale—Semi-enclosed bridge deck cruiser; 60' x 10'-6" x 4'. Speed up to 14 miles; 6 cylinder 60/70 H.P. motor. Double stateroom, saloon, toilet room, etc. Interior finish mahogany and white enamel. Price low. Cox & Stevens, 25 Broadway, New York.



No. 4714—FOR SALE—Immediate delivery, roomy 62 ft. cruising power yacht. Speed 11 miles; 60 H.P. motor, double stateroom, two saloons, bath and toilet room. Excellent condition. Bargain. Cox & Stevens, 25 Broadway, New York.



No. 4007—FOR SALE—Immediate delivery, deck cruiser in excellent condition. Two cabins, large afterdeck. Equipped with 50 H.P. heavy duty motor. Speed 11 miles. In commission. Cox & Stevens, 25 Broadway, New York.



No. 4814—For Sale—40' V bottom, bridge deck cruiser. Excellent seaboat and very well constructed. Speed up to 15 miles. Large deck space with enclosed bridge from which motor is controlled. Price attractive. Cox & Stevens, 25 Broadway, New York.

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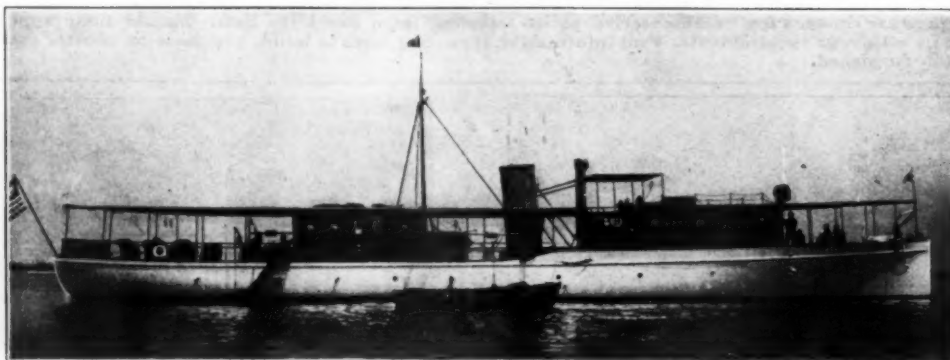
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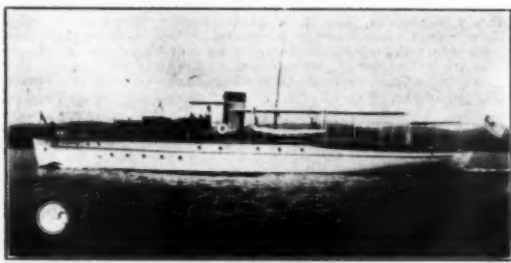

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1250 — **FOR SALE** — Especially desirable, able, fast twin-screw cruising power yacht; 112 ft. overall, 15.6 ft. beam, 5 ft. 8 in. draft. Lawley-built; speed up to 16 miles; two 220 H. P. 6 cyl. air starting and reversible Standard gasoline motors (used one season). Fitted with all conveniences, including Winton Independent generating set (new 1922); hot water heating plant, etc. Deckhouse and desk trim of teak wood. Accommodations exceptionally large, consisting of deck dining saloon forward, social hall in after deckhouse; two double, three single staterooms, bath and two toilets below aft. Sleeping accommodations for eleven besides crew. Interior, mahogany and white enamel. Very best construction. Unusually complete equipment, including motor tender and dinghy. Attractive opportunity to secure exceptional value as owner has acquired larger vessel. For plans, further particulars and inspection, apply to

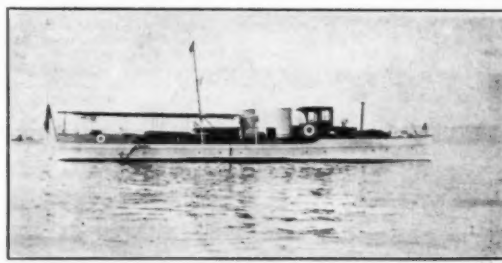
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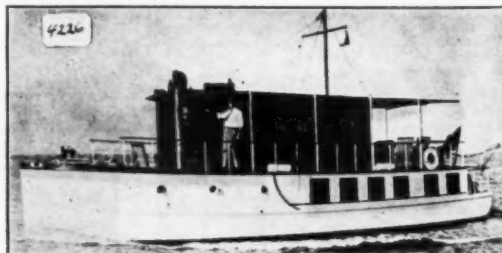
No. 1835 — **Excellent Bargain** — (Might Charter) — Handsome twin-screw cruising motor yacht; 98 x 16.6 x 4.6 ft. Speed 13-14 miles; two 125/150 H. P. 6 cyl. Standard air starting, reversible motors. Large deck dining saloon and galley forward; aft two double and two single staterooms and two bathrooms. Mahogany deckhouse and deck trim. Large deck space. Excellent seaboat. Low figure accepted for quick sale. For plans and further information apply to Cox & Stevens, 25 Broadway, New York. Telephone 2700 Whitehall.



No. 1997 — **For Sale** — Cruising motor yacht of smart appearance; 81 x 12 x 4 ft. Speed up to 14 miles; 100/120 H.P. 6 cycle 20th Century motor. Electric lights. Dining saloon in sunken deckhouse forward; aft are one double and two single staterooms, saloon with two transoms and toilet room. Very substantially constructed and well kept up. Deckhouse, cabin trunk, etc., of mahogany. Semi-enclosed bridge. Price low. Plan and further information sent upon application to Cox & Stevens, 25 Broadway, New York, Telephone 2700 Whitehall.



No. 2758 — **For Sale** — Exceptionally roomy power yacht; 65 x 13 x 3' 6" draft. Speed 10 miles; 65 H.P. 20th Century motor. Accommodations include double and single staterooms, saloon with two transom berths, bath and toilet room aft; dining saloon in deckhouse forward. Deck space unusually large. Independent electric light plant. Equipment and furnishings of the best. Further particulars, including price, etc., from Cox & Stevens, 25 Broadway, New York.

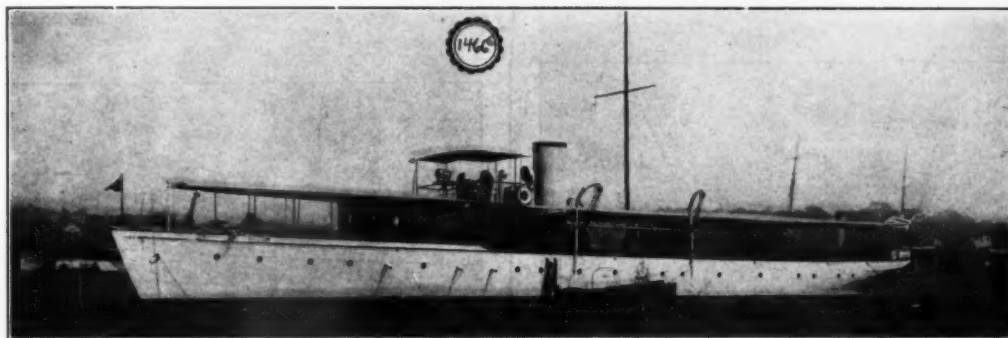


No. 4226 — **For Sale** — Exceptionally roomy power houseboat; 45 x 14' 6" x 3' 6" draft. Speed up to 10 miles, 6 cyl. 75 H.P. Frisbie motor. Deckhouse containing pilot house and dining saloon, two double staterooms, bath and toilet room. Independent electric light plant. Price low. Cox & Stevens, 25 Broadway, New York.

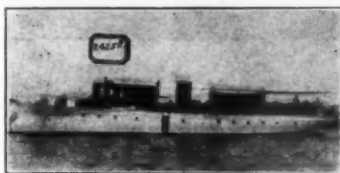
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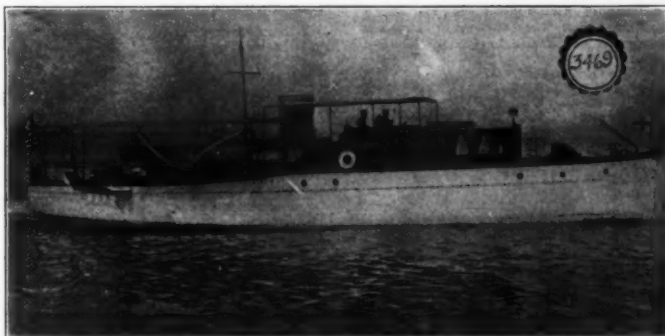
No. 1466—For Sale—Particularly attractive, steel, fast, twin-screw cruising power yacht; 138 x 17.2 x 4.6'. Speed up to 18 miles; two 300 H. P. air starting, reversible Standard motors. Beautifully finished and furnished. Large dining saloon in forward deckhouse; social hall or music room in after deckhouse; three double and one single staterooms and two bathrooms aft. Exceptionally fine furnishings. For full particulars, plan, etc., apply to Cox & Stevens, 25 Broadway, New York.



No. 2425—For Sale—Seagoing, twin-screw motor yacht; 94' x 16' x 1' 6". Construction extremely heavy. Speed 10-12 miles; large cruising radius. Remarkable deck space. Large main saloon and galley forward; exceptionally large owner's double stateroom aft with bathroom, and double guest's stateroom with separate toilet room. Low figure accepted for prompt sale. For full particulars apply to Cox & Stevens, Broadway, New York.



No. 3333—FOR SALE—Twin-screw express cruiser; 58' x 9' x 2' 10" draft. Speed up to 33 miles; two 300 H. P. Sterling motors, new 1922. Mahogany hull, double planked. Forward and after cockpits, bridge deck, owner's cabin with two berths, toilet room and galley. Remarkable seaboat. Cox & Stevens, 25 Broadway, New York.



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No. 4235—SACRIFICE—Unusually able, fast, twin-screw motor cruiser; 110 x 15.5 x 6'. Very recent build. Speed up to 17 miles; two 220 H. P. Standard 6 cyl. air starting and reversible motors. Accommodation includes dining saloon in deckhouse forward; below deck, forward are large owner's double stateroom with bathroom full width of vessel, one double and one single guest's stateroom each with separate toilet room and saloon with two transoms. Crew's quarters and galley aft. A heavily built cruiser available at figure representing small portion of outlay recently made by owner on this craft, as he has purchased large schooner yacht through us and has no further use for one described above. Opportunity to secure wholesome boat at ridiculously low figure. For plans, etc., apply to Cox & Stevens, 25 Broadway, New York.



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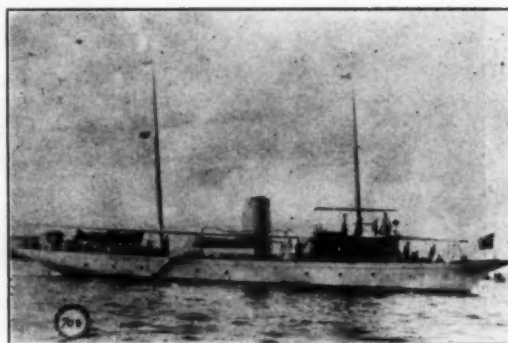
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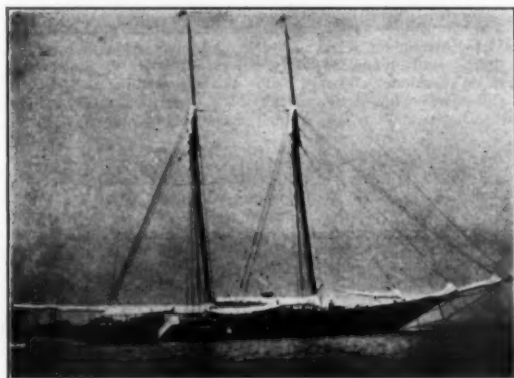
No. 36—For Sale or Charter—Suitable for cruise to Alaska—Especially attractive, oil-burning, steel, steam yacht; 153 ft. overall, 125 ft. 6 in. waterline, 20 ft beam, 9 ft. 3 in. draft. Lawley built in most excellent manner. Speed 12 to 14 knots; two Almy boilers. All conveniences. Full length teak deckhouse, contains dining saloon forward with inside passageway to social hall at after end. Aft are located two double and two single staterooms and two bathrooms (four toilets). Large available deck space. Only yacht of size and character in Pacific waters available for British Columbian—Inside Alaskan cruise—trip as wonderful and interesting as probably could be taken during summer months. Available at attractive figures either for sale or charter. For plans, price and further particulars, apply to

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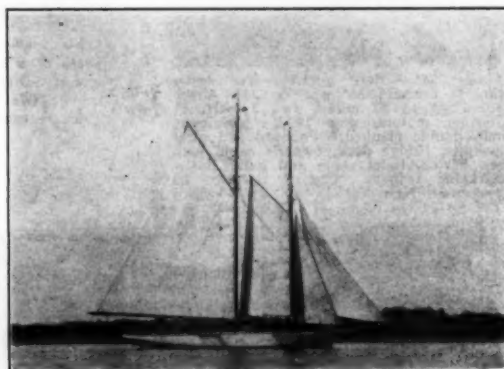
No. 70—For Sale at Low Figure—Lawley built flush deck steam yacht; 110 ft. by 15 ft. 4 in. by 6 ft. 6 in. draft. Speed 12-14 miles; triple expansion engine. Dining saloon and pantry in deckhouse forward; two double staterooms, large saloon, bath and two toilet rooms aft. Large deck space. Economical to operate. Has had excellent upkeep and is in good condition. Full particulars from

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No. 170—For Sale—Particularly able, steel, steam auxiliary schooner yacht; 148 x 110 x 27' 9" x 13' 7" draft. Speed under power 8 knots. Accommodation includes large saloon, 5 staterooms, 3 bath and toilet rooms. Splendid deck space. Opportunity to secure at remarkably low figure. For plan and full particulars, apply to

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No. 1815—For Sale or Charter—Moderate draft, Lawley-built auxiliary schooner; 77 ft. 6 in. overall, 57 ft. waterline, 18 ft. 9 in. beam, 6 ft. draft. Speed under power 8 to 9 miles per hour; 50/80 H.P. motor. Sails good condition. Large saloon, one double and two single staterooms, bath and two toilets. Considerable sum spent last year in improvements and renewals, including new heating plant, independent Delco electric light plant, gasoline and water tanks, awnings, sail covers, new Palmer engine in launch, etc., etc. Exceptionally able, comfortable and roomy craft. Fast sailer. Heavy construction. Interior finish mahogany and butternut. Price attractive.

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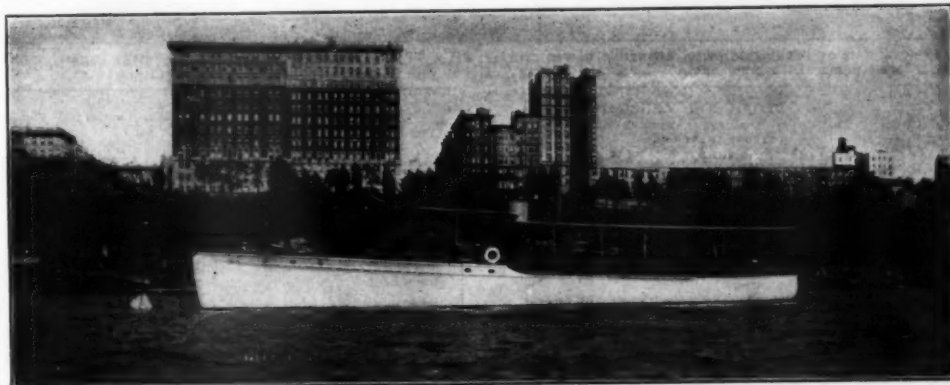
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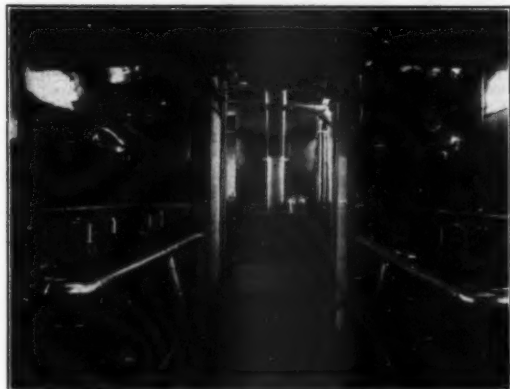


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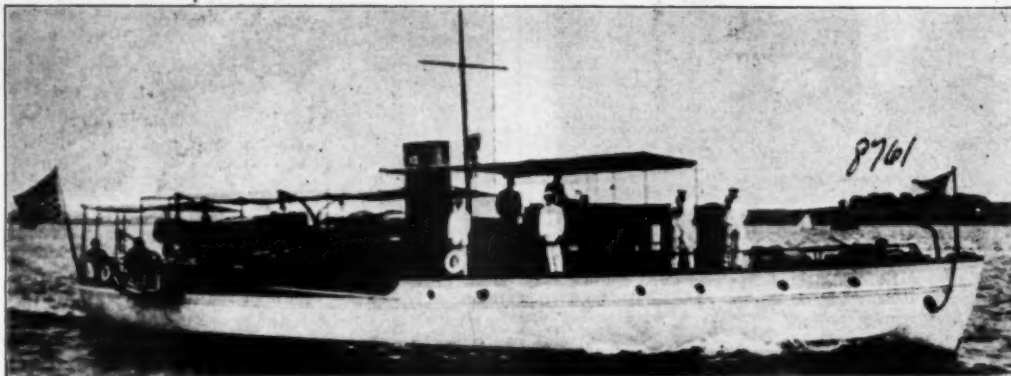
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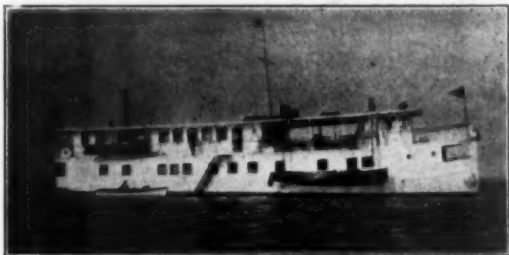
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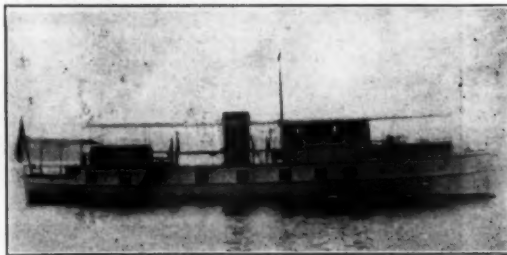
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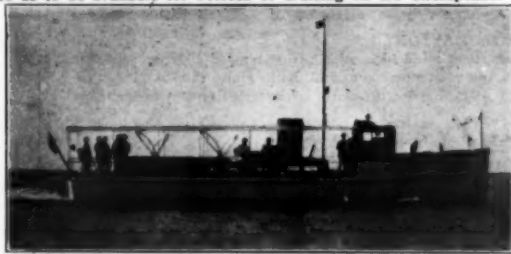
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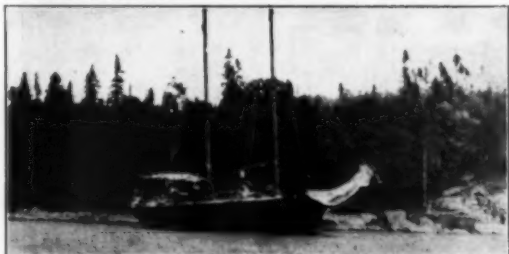
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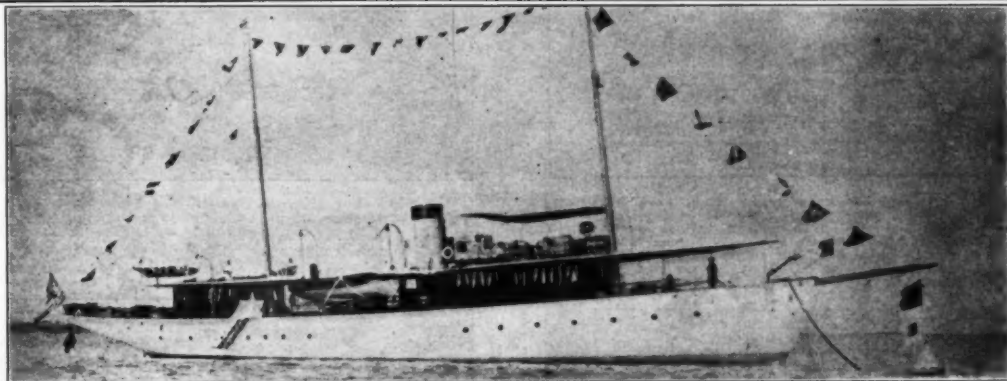
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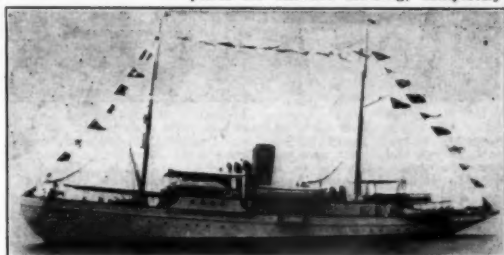
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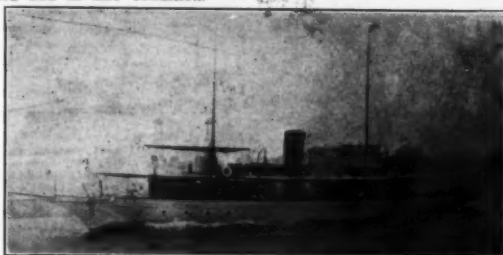
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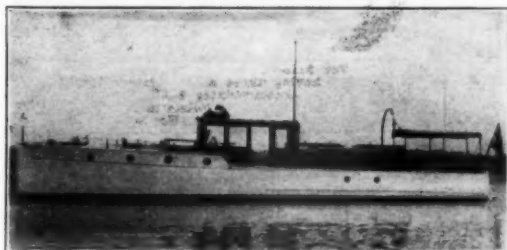
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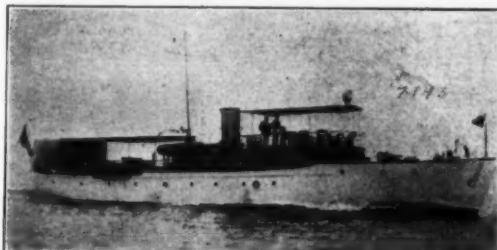
No. 26—For Sale or Charter—Ocean-going steam yacht, 158' x 127' 7" x 24' 8" x 12' 9" draft. Commodious quarters, including 5 staterooms, saloon and three baths.



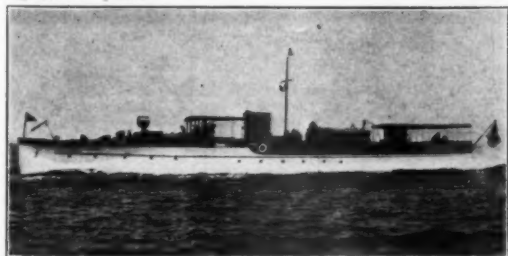
No. 74—For Sale—Very desirable steam yacht, 126' x 16' x 18' 6", speed 15 miles. Five staterooms, 2 saloons on deck, galley, engine room and crew's quarters. Completely equipped and in excellent condition.



No. 9078—For Sale—Fast express cruiser, 48' x 10' x 3', with twin-screw Van Blerck motors, 150 H. P. each, speed 24 miles, stateroom and saloon, toilet, galley, engine room, and crew's quarters.



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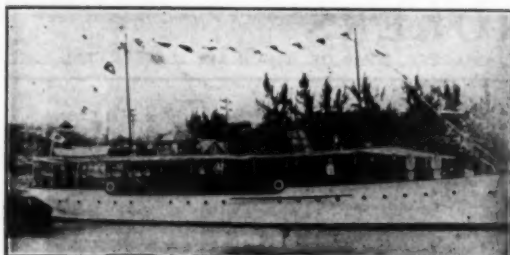
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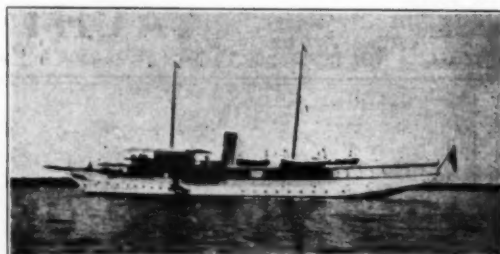
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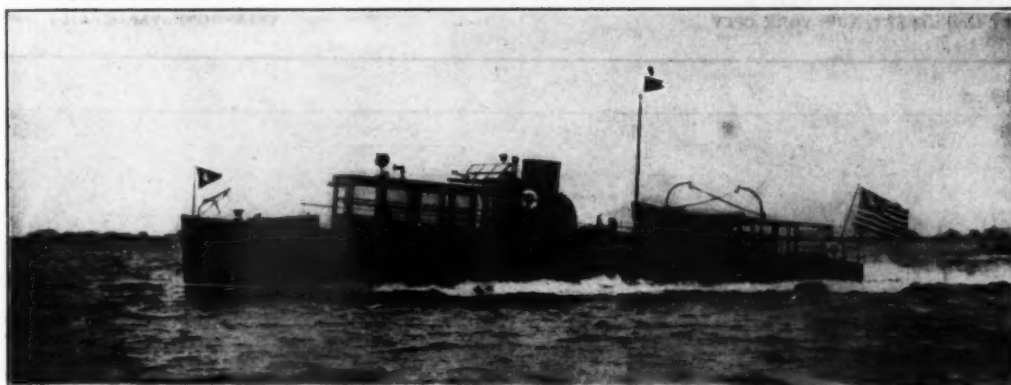
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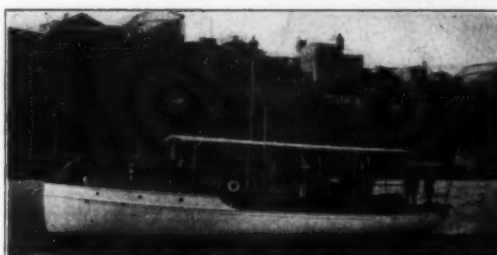
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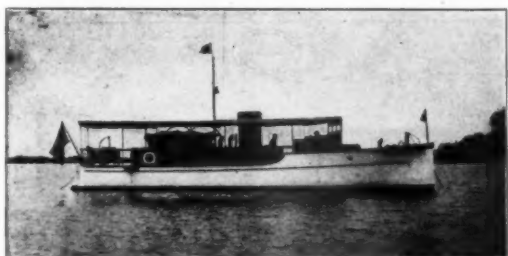
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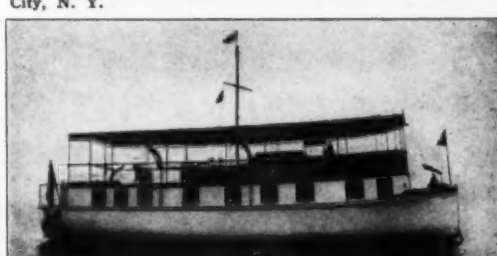
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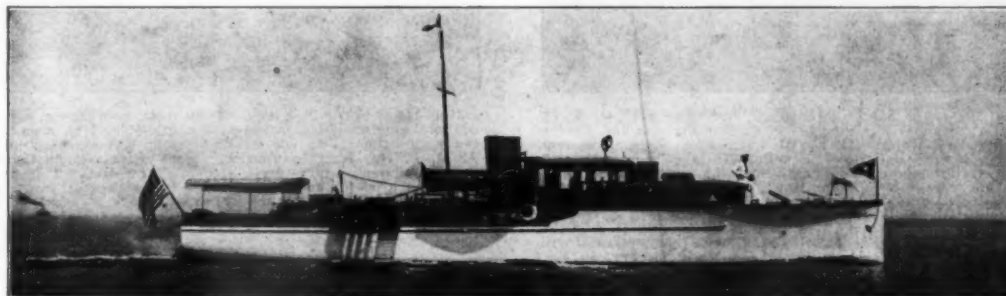
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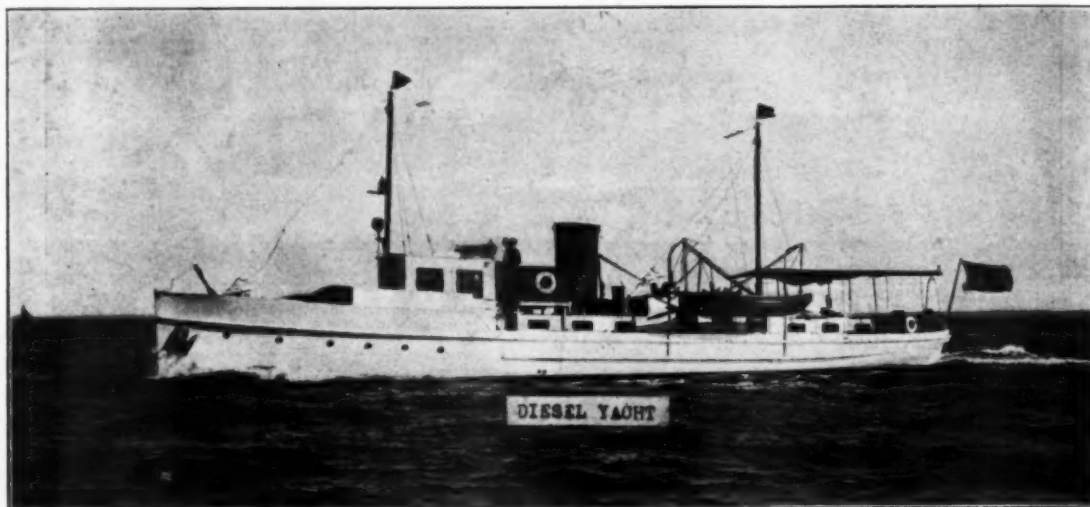


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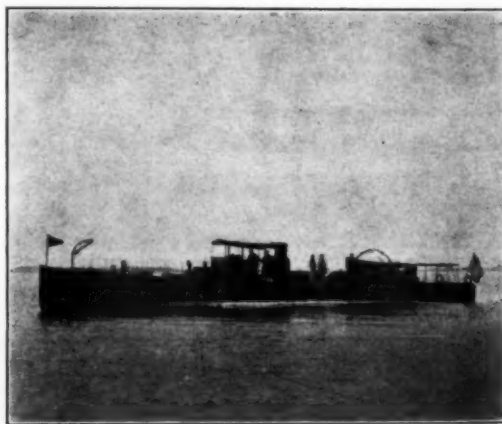
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No. 3017 — For Sale — Off shore cruiser delivered new 1922 L. O. A. 77' 4" Beam 14' Draft 6'. Construction very heavy and of the best. Owner's accommodations consists of a double stateroom aft and a double stateroom forward with a separate toilet room connecting with each. Large dining saloon and galley below aft. Deck house forward can be used as a shelter in bad weather and is fitted with a berth with draws etc., or as a chart room. Is powered with a 4 cylinder 70 H. P. Mianus Oil Motor and has a cruising radius of 1600 miles on 800 gal. of fuel oil at 10.5 knots. Oil delivered on board at 8c per gal. Independent lighting outfit and a hot water heating plant. This yacht can be operated at considerable less than a gasoline driven vessel same size. Owner anxious to build larger boat, and will accept reasonable figure for a prompt sale. Located near N. Y. City. For further particulars apply R. M. Haddock, Naval Architect and Yacht Broker, 50 East 42nd Street, N. Y. City.



No. 358 — For Sale — Twin screw motor yacht L. O. A. 98' Beam 15' draft 4' 6". Two 125 H. P. Air Starting and Reversing Standard Motors. 4 K. W. independent lighting system, Edison Storage Batteries, 100 cells. This yacht is electrically equipped throughout, including ventilating fans, electric windlass, etc. Built by George Lawley & Son, Corp. of Boston, who spared no expense in turning out the very best. Excellent accommodations. Owner unable to use and will accept for quick sale about one third of what it would cost to duplicate this craft today. For location and price communicate with R. M. Haddock, Naval Architect and Yacht Broker, 50 East 42nd Street, New York City. Tel. Vanderbilt 10499.



No. 344 — For Sale — One of the best twin screw express cruisers now available for sale. Length 90'. Has been used but very little. Two 300 S. P. Sterling motors speed up to 32 M. P. H. Built by Lawley. Since the above photograph was taken, few changes have been made on deck. This yacht would be ideal for anyone desiring a fast seaworthy ferry boat or cruiser. Will stand rigid inspection which is invited. Located in New York City. For further particulars apply R. M. Haddock, Naval Architect and Yacht Broker, 50 East 42nd Street, New York City.

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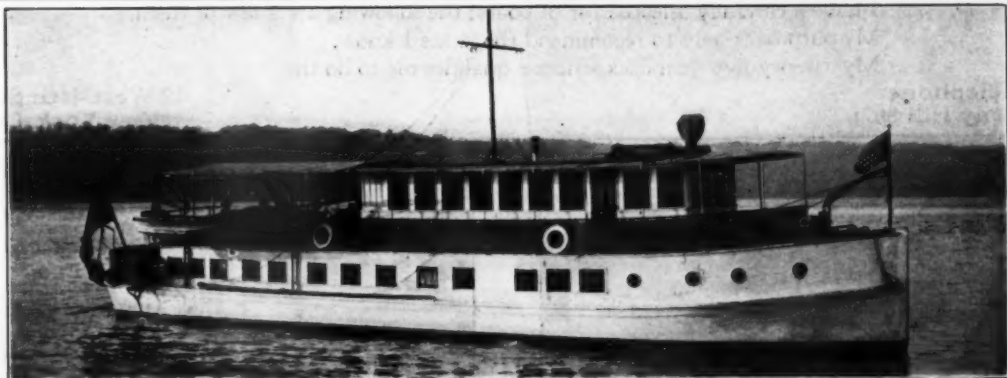
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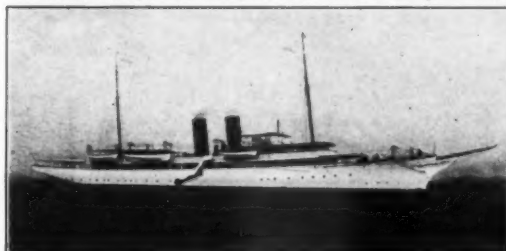
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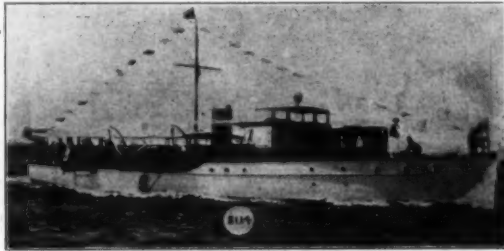
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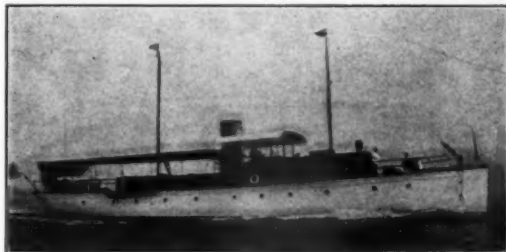
No. 233—For Sale or Charter—Attractive modern 70' Twin Screw cruising houseboat. Tastefully and beautifully furnished, very roomy, Beam 17', Draft 3'. Mahogany deck house 27' x 10', a combined dining saloon and social hall. Five staterooms—two double, two communicating, one single, each with running hot water, bath and two toilets. Entire boat newly furnished and decorated. All new equipment throughout. Electric lights, generator and searchlight. New 15' launch, skiff and swimming raft. Two new 4-cycle 4 cylinder engines, bridge control. Speed 10 to 11 miles. This is a very desirable and able boat, most complete, comfortable, seaworthy and economical to operate. For further particulars, apply R. M. HADDOCK, Naval Architect and Yacht Broker, 50 East 42d St., New York City.



No. 130—For Sale—May Charter—Seagoing twin screw steam yacht, 262' x 29' x 16' draft. In excellent condition. Wonderful accommodations. Located near New York City. For further particulars apply R. M. HADDOCK, Naval Architect and Yacht Broker, 50 East 42d St., New York City.



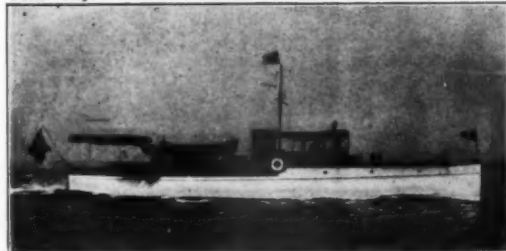
No. 3114—For Sale—Modern twin screw cruiser—built 1921. 93' x 15' x 5' draft. Two 80/115 H. P. Winton Motors. Speed up to 14 M. P. H. Two double and one single stateroom. Deck dining saloon. For further particulars apply to R. M. HADDOCK, Naval Architect and Yacht Broker, 50 East 42d St., New York City.



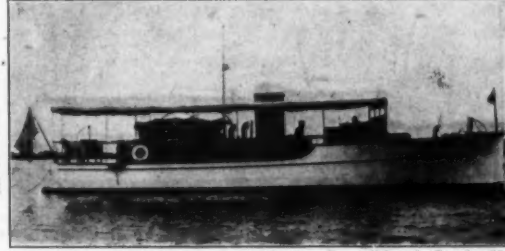
No. 398—For Sale—Twin Screw motor yacht—90' x 16' x 5' 2" draft two 6 cylinder 115 H. P. Winton Motors speed up to 15 M. P. H. Can accommodate 8 to 10 in owners' party. Deck dining saloon. Expensively fitted and furnished. In perfect condition and can be placed in commission on short notice. For further particulars apply R. M. HADDOCK, Naval Architect and Yacht Broker, 50 East 42d St., New York City.



No. 4211—For Sale—Fast twin screw express cruiser. Two Speedway motors—speed 28/30 M. P. H. Bridge enclosed. Large cockpit aft. Best design and build. For further particulars apply to R. M. HADDOCK, Naval Architect and Yacht Broker, 50 East 42d St., New York City.



No. 3139—For Sale—Enclosed 60' bridge deck cruiser. Large cockpit aft. Speed up to 15. M. P. M. Standard motor. Very attractive and seaworthy. Located near New York City. For further particulars apply R. M. HADDOCK, Naval Architect and Yacht Broker, 50 East 42d St., New York City.



No. 383—For Sale—One of the Consolidated Stock 52' cruisers. Six cylinder Speedway motor. In A1 condition. Rigid inspection invited. Location at New York City. For further particulars apply R. M. HADDOCK, Naval Architect and Yacht Broker, 50 East 42d St., New York City.

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formerly General Manager of The Elco Works, of Bayonne, N. J.

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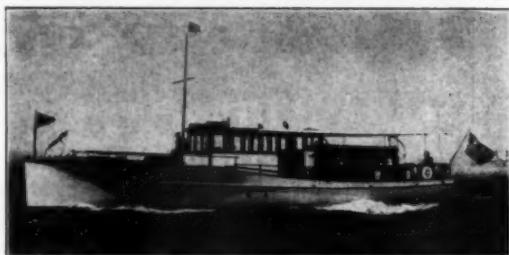
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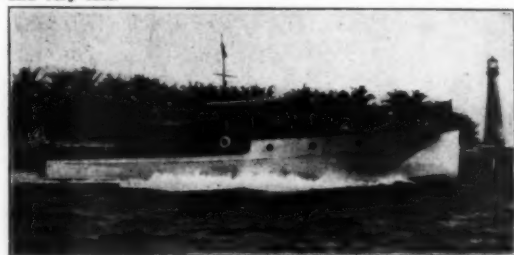
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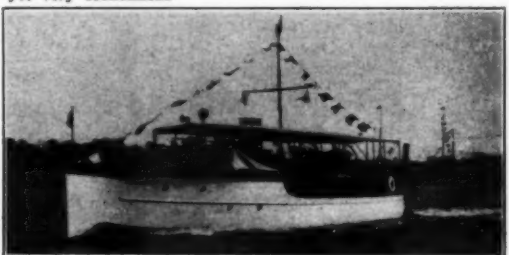
No. 1—For Sale—Consolidated Fast Day Cruiser. Twin Screw SPEEDWAY Engines, each 200 H.P. Speed, maximum 28 miles, cruising 25 miles. Enclosed bridge. Saloon with berths. Bathroom. Galley well arranged. Beautifully finished and very fast.



No. 5—For Sale—One of the Elco Deck House Cruisers. Length, 54 ft. Beam, 13 ft. 6 in. Has owner's stateroom. Unusual Saloon and Galley, where a large party can be entertained in comfort. Deck House, fifteen feet long. Twin screw, yet very economical.



No. 2—For Sale—Great Lakes Express Cruiser. Length 50 ft. Beam 10 ft. 7 in. Van Blerck Engine, 8-cylinder. Speed, maximum 22 miles, cruising 17 miles. Has Owner's stateroom, Saloon, Galley, Cockpit and Bridge Deck. Sleeps six persons.



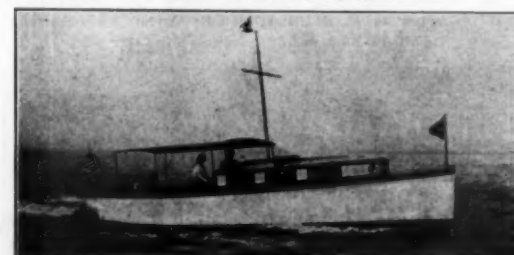
No. 6—For Sale—Fine Consolidated Bridge Deck Cruiser. Length, 52 ft. Beam, 11 ft. 3 in. Splendid arrangements. Owner's stateroom aft. Beautifully fitted Saloon. Additional stateroom forward. SPEEDWAY Engine. Recent inspection shows this boat to be in fine condition.



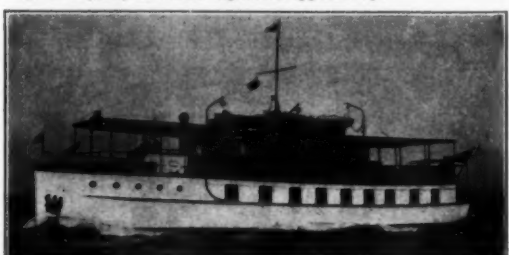
No. 3—For Sale—Elco Bridge Deck Cruiser. Length 40 ft. Beam 9 ft. 10 in. Has owner's stateroom. Large Saloon and Galley. Speed 12 miles. Can recommend it from personal knowledge; it is a splendid boat, fully equipped.



No. 7—For Sale—Best of the 50 ft. Bridge Deck Cruisers the Elco turned out. Protected Bridge. Luxurious owner's stateroom. Delightful Saloon. Commodious Galley. STANDARD Engine. Speed, 13 miles. Splendid opportunity.



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- 58' 6" x 12' x 4' Bridge Deck, 90 H.P. Murray & Tregurtha. Inclosed bridge. Boat in first-class condition.
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- 45' x 14' 6" x 3' Houseboat, 80 H.P. Buffalo.
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- 60' x 14' x 2' 6" Houseboat, 1922 (2), Standard engines, 3 staterooms and deck saloon.
- 65' x 13' x 3' 6" Houseboat, 70 H.P. H.D. Standard, 2 double and 1 single staterooms.
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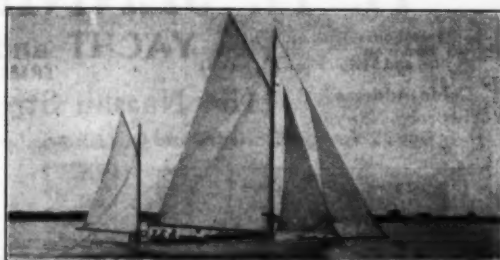
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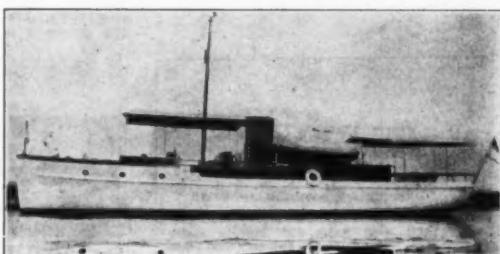
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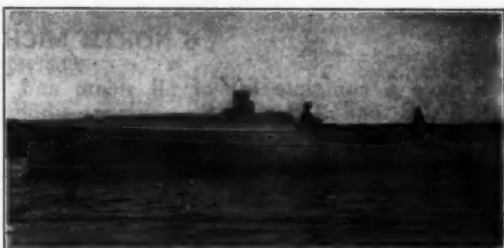
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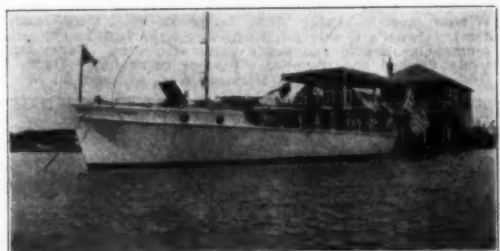
44' O. A., 30' L. W. L. x 12' 7" x 5' auxiliary yawl, 12 H.P. Palmer, designed by J. R. Purdon, boat in first-class condition including new sails and tender. Mahogany finished on interior, a fast and able boat. For further particulars write to Yachtmen's Service Agency, 1233 Real Estate Trust Bldg., Phila., Pa.



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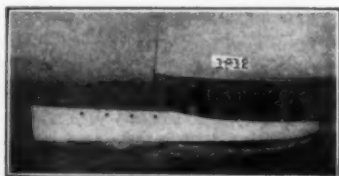
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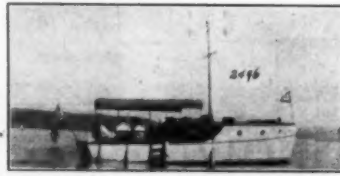
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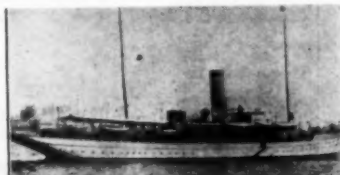
No. 2496—30 foot cruiser. 9 ft. 3 in. beam, 2 ft. 6 in. draft. Two berths in cabin. Self-bailing cockpit, 8 ft. x 9 ft. Four cylinder Dorman motor, 25-40 H. P. installed new, 1923. Speed, 10 miles. Electric lights, etc. Splendid proposition. Price very reasonable as we sold the owner a larger yacht.



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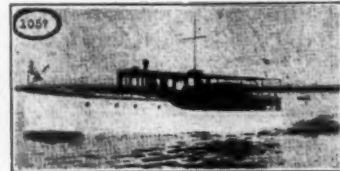
No. 1058—For Sale—Desirable twin screw cruiser new 1921 93' x 15' x 5'. Powered with two 80-110 H.P. 6 cylinder Winton motors. Large deck dining saloon. Very commodious. Owner's double stateroom with large bath and dressing room. One double and single guest stateroom. Very attractively finished and equipped. Further particulars. Henry C. Grebe & Co., Inc., 6 North Michigan Ave., Chicago, Ill.



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No. 1109—For Sale—Very comfortable 60' x 13' x 4' bridge deck cruiser. Exceptionally heavily constructed. Powered with a 6 cylinder heavy duty Standard motor, one-man control. Will sleep eight comfortably, besides crew of two. Price and full particulars from Henry C. Grebe & Co., Inc., 6 North Michigan Ave., Chicago, Ill.

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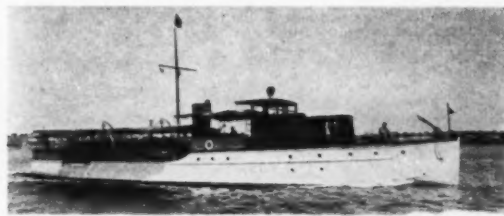
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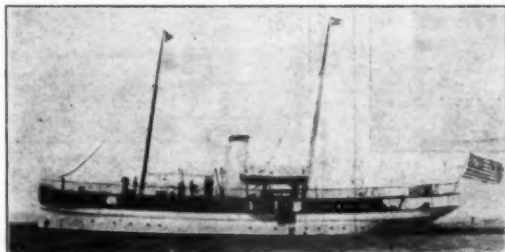
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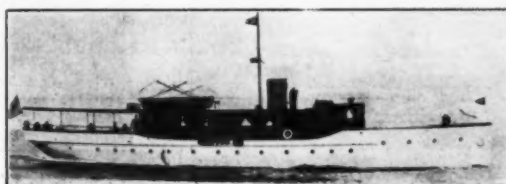
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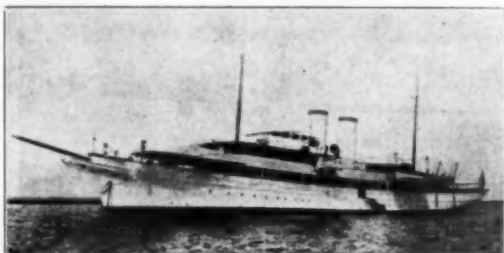
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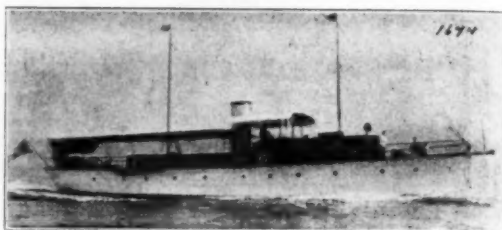
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No. 1223—For Sale—46' express cruiser, speed 18 miles, 2 staterooms, galley etc. Built of double-planked mahogany and equipped with speedway motor, with self starter, a very desirable craft.

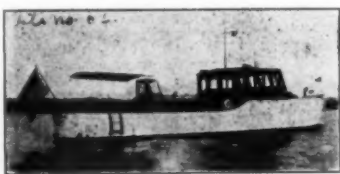
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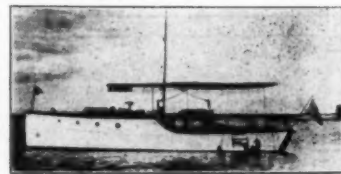
"Agent for the Casey Boat Building Co."



No. 62—For Sale—Cruiser L. O. A. 55', L. W. L. 55', beam 11', draught 2' 9". Very desirable express cruiser. Excellent condition. Price very reasonable. Sleeping accommodations for 6 people.



No. 139—For Sale—Cruiser—L. O. A. 45', L. W. L. 43'. A good bargain. Sleeping accommodations for 7 people.



No. 82—For Sale—Twin screw houseboat. Dimensions, L. O. A. 84' 6"; L. W. L., 76'; beam, 23' 6"; draught, 4' 6". Three single and two double staterooms. Boat in excellent condition. An excellent bargain. Apply to Paul M. Runyon, Yacht Broker, Room 510 Olympia Building, New Bedford, Mass.



No. 182—Glass Cabin Cruiser L. O. A. 35', Beam 7' 8", Draught 3'; excellent condition and a good bargain for which she is offered. Fully equipped for cruising.



No. 30—Cruiser, L. O. A. 39' 6", Beam 10', Draught 3' 6"; good condition; engine new; price reasonable. Sleeping accommodations for 4 people. Full cruising equipment. Price reasonable.

## THE MOTOR BOATING MARKET PLACE

The rate for "For Sale" and "Want" advertisements is 8 cents per word, minimum \$2.00. If an illustration is used, the charge is as follows, which includes the making of the cut:

Cut one inch deep, two inches wide.....	\$ 9
Cut 1½ inches deep, three inches wide.....	\$12
Cut 2¼ inches deep, four inches wide.....	\$20
Cut 2¾ inches deep, six inches wide.....	\$25

Classified advertisements set entirely in small light face type. No extra charge for capitals. Bold face type used at display rate, \$12 per inch, single column.

### Opportunities for the Motor Boatman

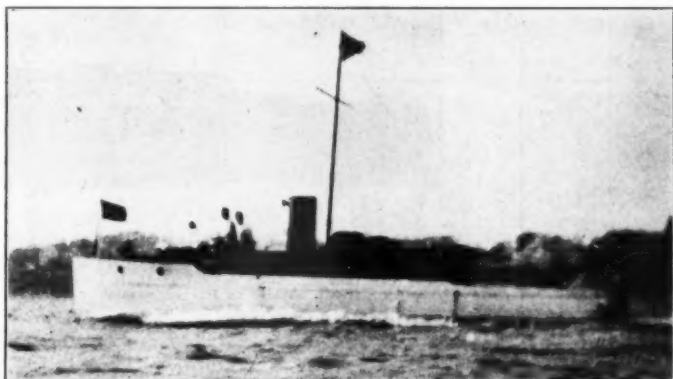
Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR Boating.

MoToR Boating, 119 West 40th St., New York



#### FOR SALE OR TRADE

"ADIEU" Hacker built and designed Runabout, 32' x 6' 6". Powered with 400 H.P. Packard Liberty Motor, Delco Starter. Motor installation by Hacker. Forward cockpit seating three people, rear cockpit five. Double planked bottom, copper riveted. I will trade for Cruiser 40 to 50 ft. Will add some cash for a boat that is a good buy. Guaranteed in first-class condition in every respect. 45 miles per hour. Just the boat to win at your local races this Summer. Deal directly with owner. "ADIEU" stored in New York. Address, J. A. Mellich, No. 312 Riverside Drive, New York, for further particulars.



FOR SALE—Cruiser, Pomander built by Geo. Lawley & Sons, 1916. Brand new Van Blerck 6 cylinder engine 1922. Speed 16 to 18 miles per hour. Accommodates 4, can easily accommodate 8. Entire boat in first class condition. Chas. H. Horne, Essex and Granite Sts., Haverhill, Mass.

ONE cyl. two-cycle.—1½ h.p. Detroit, \$23; 3 h.p. Fox, \$30; 4 h.p. Gray, \$35; 6 h.p. Gray, "as is," \$25; 7 h.p. Havannah, \$45. Two cyl. two cycle.—6 h.p. Gile, \$65; 6 h.p. Lockwood-Ash, \$85; 8 h.p. Ferro, \$95; 10 h.p. Vim, \$75; 12 h.p. Gray, \$115; 16 h.p. Northwestern, \$105; 20 h.p. Gray, \$125. Three cyl. two cycle.—18 h.p. Fairbanks-Morse, \$135; 25 h.p. Ferro, \$185; 40 h.p. Vim four cyl. two cycle, \$225; 40 h.p. Emerson, \$175. Four cyl. four cycle.—7 h.p. Frisbie, \$115; 10 h.p. Dunn two cyl., \$85; 16 h.p. Dunn four cyl., \$115; 16 h.p. Wisconsin four cyl. unit plant, \$275; 16 h.p. Erickson two cyl. with gear, heavy duty, \$145; 20 h.p. Truscott three cyl. heavy duty, \$175; 30 h.p. Erd four cyl. \$225; 40 h.p. Wisconsin, 5¼ x 7, \$285, and others. Used engines taken in trade on new or used makes. 90 h.p. eight cyl. Curtis, \$185; 220 h.p. Curtiss, \$235; 100 h.p. Hall-Scott, \$275. State your power needs. Badger Motor Company, Milwaukee, Wis.

YOUNG MAN, 24, desires position in boat yard or on small boat. Experienced seaman, navigating small boat, handling and upkeep. Navy coxswain 2½ years, merchant service third and navigating officer 4 years. Licensed as second mate ocean mate inland. Address Box 102, MoToR Boating.

FOR SALE—13-15 H. P. heavy duty Buffalo engine, reverse gear, shaft, propeller. Rebuilt in our shops. Will demonstrate. Hague Machine Works, Norfolk, Va.

EXPERIENCED MASTER wishes position as captain on power cruiser of 65 ft. or over. Will go anywhere. References. James E. Beal, 20½ Whipple St., Kittery, Maine.

#### BOAT FOR SALE

Description 42 ft. x 10 ft. bridge deck cruiser; newly conditioned, refinished and upholstered. Salt water fittings; elaborate Sands toilet in each cabin; fixed sleeping accommodations for six persons; 30 H.P. engine; speed 10 miles; electric lighting, charging and starting system with new batteries; automatic anchor light; electric horn; all engine controls at steering wheel on bridge deck; 90 gallons gasoline capacity; 60 gallons fresh water in copper tanks; all fittings throughout boat are of highest grade; white enamel interior finish with mahogany trim. This boat is a wonderful off shore cruiser, and must be seen to be appreciated. Price, \$4,500. Can be seen at Nyack, N. Y. Address A. C. Mason, 10 Rodney St., Glen Rock, N. J. Phone Ridgewood 1411 W.

Free Illustrated Literatures, New Rebuilt Engines, Outboards, Clutches, Gears, Joints, Pumps, Hyde Propellers, Stoves, Cruisers, Runabouts, Canoes, Camping Outfits. Canadian Boat & Engine Exchange, Toronto.

FOR SALE—One 4 cylinder Winton, direct connected, generating plant 5 KW. Percy M. Child, 1110 Fourth St., N. W., Washington, D. C.

WANTED—40 to 50-h.p. Medium Duty Motor. Buffalo, Scripps, Sterling or some other standard make. Must be late model and in good condition. Send full particulars and price in first letter. JESIEK BROS., Macatawa, Mich.

FOR SALE—23 x 6 ft. runabout, 2 cylinder Fairbanks-Morse engine with reverse gear. Forward cockpit open for chairs. Full inventory, including spray hood. F. R. Farnham, Huntington, N. Y.

FOR SALE—3 cyl., 2 cycle, 6-8 H. P. Palmer motor and propeller, Atwater-Kent ignition system. Buying larger motor for my boat, will sacrifice outfit for \$50 to quick buyer. Address L. Wood, care MoToR Boating.

FOR SALE—Engine, 6 cyl. Speedway gasoline, 150 H. P., clutch and reverse gear. Excellent condition. H. Chrystal Iron Wks., Inc., Pioneer St., Brooklyn, N. Y.

FOR SALE—60-90 H. P. 6 cylinder, entirely rebuilt Herschell Spillman Marine Engine, aluminum base, paragon reverse gear, Bosch old type two joint magneto, and Atwater-Kent 3 plugs per cylinder; has 6 volt generator, no starter, Stromberg carburetor, water jacketed intake manifold, oil cooling tank with two pump system. Engine is up to date and in good running order and is being taken out to install more power. Price \$800. A. B. Cartledge, 1514 Chestnut St., Phila.

CABIN CRUISER AT SACRIFICE. 50 X 10 x 2¼ ft. Completely equipped, ready for cruising. 6 cyl. Wisconsin engine. Like new. Full headroom throughout. Too large for owner, will sacrifice for \$1,200.00. Norman Baker, Muscatine, Iowa.

When writing to advertisers please mention MoToR BOATING, the National Magazine of Motor Boating, 119 West 40th Street, New York

Is your present engine satisfactory? If not we can offer you real value in a new motor of any of the following makes:

**STERLING**      **KERMATH**      **NIAGARA SPECIAL**      **PEERLESS**  
**DOMAN**      **WOLVERINE**      **FRISBIE**

or a Rebuilt Guaranteed Machine

We will make you a liberal allowance on your old motor. Send for our catalogue of new engines or our Bargain List.

The Largest Marine Engine Dealers in the World

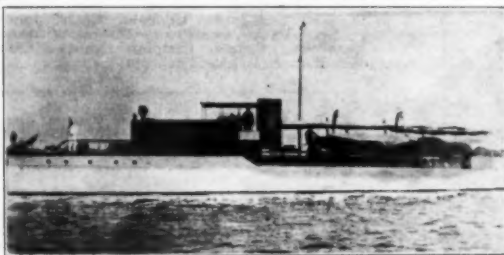
**BRUNS, KIMBALL & CO.**

Branch Store: Philadelphia, Pa.

153-155-157-159 West 15th Street  
**NEW YORK CITY**



**FOR IMMEDIATE SALE**—Finest Lawley wholesome Coast Cruiser available at very attractive price. 72 o. a., 14 beam, 4 draft. Built of finest materials throughout. Superior accommodations of 2 fine staterooms, main saloon berthing 4; 2 toilets and bath with foot tub and real shower. Interior finish of owner's quarters the most beautiful extant. 6 cylinder "20th Century" motor; separate electric plant. Brand new inventory most complete. Unusual opportunity is offered to secure one of the finest yachts of size and type at bargain for quick action. Inspectable near New York. Full details from **SIMON FISCH**, Yacht Broker, 185 Madison avenue. Ashland 6138.



**FOR SALE OR CHARTER**—82 ft. Lawley built Cruiser. Standard Engine. Speed 15 miles. Perfect condition throughout. Best yacht of its type available. Will charter for a reasonable price or sell at less than half cost. **SOUTHERN YACHT AGENCY**, American Building, Baltimore, Md.



#### 27 FOOT LAUNCH HULL

One left of our Standard Hunting Cabin Launches, 7 ft beam, 2 ft draft. Has a large comfortable cabin. Large cockpit. These launches are handsomely finished, fast, able and very easy in rough weather. Built in our best fashion. A great Bargain. Write us for particulars.

**STEARNS & MCKAY CO.**

Marblehead, Mass.



**CRUISER**—Raised deck—31 ft. x 8 ft. 6 x 2 ft. 10; 17/25-4 cyl. Sterling Motor; speed, 9/10 miles; electric lights, cushions, icebox, stove, toilet and two spring berths. Also complete cruising equipment. Exceptional sea boat; very roomy, sleeping four; at attractive figure. **JOHN H. SPENCER**, 32 Nassau Street, New York City.

- |                                                  |       |
|--------------------------------------------------|-------|
| 1-6 cyl., 4 cy., 45 to 65 Sterling.....          | \$700 |
| 1-3 cyl., 4 cy., 27 H.P. Wolverine.....          | 500   |
| 1-6 cyl., 4 cy., 40-50 H.P., with clutch         |       |
| Hershell Spillman .....                          | 100   |
| 1-4 cyl., 4 cy., 18 H.P., Mycle and              |       |
| Cullins .....                                    | 100   |
| 1-3 cyl., 4 cy., 15 H.P., Pees with clutch.      | 100   |
| 1-3 cyl., 2 cy., 18 H.P., Hock.....              | 100   |
| 1-2 cyl., 2 cy., 12 H.P., Smalley clutch.        | 75    |
| 1-2 cyl., 2 cy., 9 H.P., Gray.....               | 75    |
| 1-1 cyl., 2 cy., 6 H.P., Gray.....               | 50    |
| 1-1 cyl., 2 cy., 2 1/2 H.P., Caille.....         | 40    |
| 1-1 cyl., 2 cy., 4 H.P., Perkins.....            | 30    |
| 1-1 cyl., 2 cy., 4 H.P., Truscott.....           | 30    |
| 2 Evinrude out board, run very little, \$50 each |       |
| Jeisak Bros., Macatawa, Mich.                    |       |

A few congenial men and women, gentiles, are invited to join six months' South Seas cruise on 250 foot yacht, sharing expenses. \$1200 each. References exchanged. Wallace Todd, Hotel Chancellor, San Francisco.



File No. 69 Cruiser, L.O.A. 39', L.W.L. 37', Beam 9'4", Draught 3'5", excellent condition. New Engine; completely equipped for cruising. A Real boat for a fair price. Reply to Paul N. Runyon, Yacht Broker, Room 510 Olympia Building, New Bedford, Mass.

- |                                                                           |             |
|---------------------------------------------------------------------------|-------------|
| 20 H.P. 4 Cylinder Kermath                                                | \$350.      |
| 18 H.P. 4 Cylinder Murray Tregurtha                                       | \$200.      |
| 18 H.P. 3 Cylinder Automatic                                              | \$250.      |
| 24 H.P. 4 Cylinder Speedway                                               | \$350.      |
| 24 H.P. 2 Cylinder Heavy Duty Buffalo                                     | \$250.      |
| 24 H.P. 3 Cylinder 4 Cycle Heavy Duty Lathrop                             | \$500       |
| 27 H.P. 3 Cylinder Wolverine                                              | \$350.      |
| 32 H.P. 4 Cylinder Standard                                               | \$500.      |
| Pair 60 H.P. 4 Cylinder Medium Duty Speedway                              | \$600 each. |
| 60 H.P. 4 Cylinder Craig                                                  | \$550.      |
| 65 H.P. 4 Cylinder Standard                                               | \$550.      |
| 75 H.P. 6 Cylinder Automatic                                              | \$550.      |
| Pair 150 H.P. 6 Cylinder Model M. Van Blerck with Starters and Generators | \$700 each. |
| Pair 200 H.P. 8 Cylinder Model M. Speedway with Starters                  | \$700 each. |

**EDWARD KEIL**

151st Street, North River, New York

Advertising Index will be found on page 150



For Sale—30' x 8' Hand Express Cruiser. V Bottom type. Launched June 1923. Run only 85 hours. Speed 18-19 miles. Four cylinder Wisconsin motor, 96 H. P. at 1200 R.P.M. Centralized controls, complete equipment. Owner buying larger boat. Photographs and inventory to those interested. **W. G. Bryant**, 390 Park Place, Bridgeport, Conn.

For Quick Sale—50 foot, 10 foot beam, draft 3 feet raised-deck cruiser now practically in commission in Florida waters. Electric lights, new Lathrop motor, every luxury and convenience. \$3,000 cash buys yacht. May be examined at Mathews Boat Yard, Daytona, Fla. For particulars write owner, **Eugene Jones**, R. F. D. A-101, Orlando, Florida.

I want to buy a bridge deck cabin cruiser 45 to 50 feet long, speed about ten miles per hour. Must be in good condition, staunch and seaworthy, and have sleeping accommodations for six people. Interested only in a bargain. Give full particulars, lowest price, etc. Address "Lake Port" care of "MOTOR BOATING."





## Fast Off-Shore Fishing Skiff

Gentleman's deep sea fishing skiff, 23' x 6' x 2'. Built to go out in any weather and ride out any sea. Finest lap streak construction with  $\frac{3}{4}$ " cedar planking, heavy copper fastenings on sprung-oak frames.

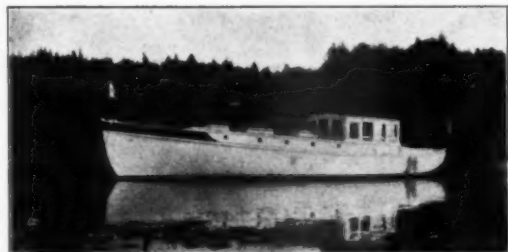
This boat has been used exclusively for tuna fishing 30 to 40 miles off the South Jersey coast. It is the most seaworthy type of boat ever designed, whether for open ocean, river or inland lake. Both hull and engine in perfect condition. Engine is a 1923 50 H.P. Kermath High Speed with aluminum base, oil cooler, Bosch magneto and Atwater Kent ignition. Engine installed new last summer, with new metal shaft log and new engine house.

Fully equipped with life preservers, compass, extra Atwater Kent ignition head, tools, sprit sail for emergency and sweep.

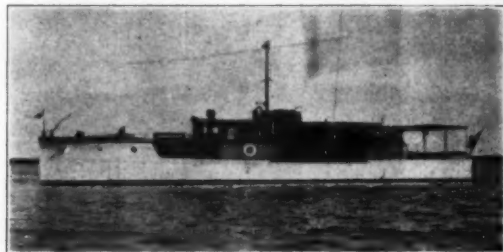
For sale at practically the cost of new engine installation because I am having a larger skiff built. Ready for quick delivery. May be inspected at Seaside Park, N. J.

*Write or wire for price.*

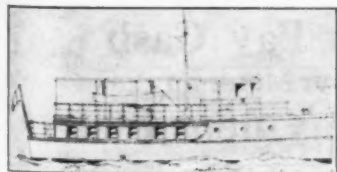
**Edwin M. Chance, 1600 Walnut Street, Philadelphia, Pa.**



No. 173—For Sale—Able power boat, 49 ft. x 12 ft. x 3 ft. 6 in. Design worked up by John G. Alden from models of Eastport fishing launches. Built in 1922 of selected materials. Very plainly finished inside and out. Accommodations consist of two berths and galley forward, two berths in main cabin (full headroom), toilet room. Ample locker space. Large engine room, roomy pilot house and cockpit. Four-cycle Mianus engine, speed nine miles. Highly practical for use in connection with a summer home which necessitates a ferry for carrying passengers and supplies in all kinds of weather, winter and summer, and also for cruising. Apply John G. Alden, 148 State St., Boston.



FOR SALE—62 ft. Great Lakes Cruiser. Good as new. Perfect condition. Twin-screw. Speedway Engines. Speed up to 22 miles. Best and cheapest yacht of its type available. Owner anxious to sell as we have sold him larger yacht. Make offer. We also have several 54 ft. Great Lakes Cruisers for sale at attractive prices. SOUTHERN YACHT AGENCY, American Building, Baltimore, Md.



FOR SALE—45 ft. Cruising Houseboat. Very beamy and has exceptionally large accommodations for its size. In first class condition. Buffalo Engine. Will be delivered in commission fully equipped in Florida or later in the North as desired. Price very reasonable. SOUTHERN YACHT AGENCY, American Building, Baltimore, Md.

For Sale—Enclosed bridge deck cruiser, 38 x 10 x 3, new 4 cylinder Palmer engine, self-starter, generator, bilge pump. Sleeps four comfortably, toilet, galley, electric lights; fully equipped, perfect condition. Price \$5,000, cost \$10,000. Walter Hyland, 1079 University Ave., New York City.

WANTED HULL.  
Hacker design, high grade V. Bottom speed runabout hull.

A. A. Kent,  
Ardmore, Pa.

Bargain—45 ft. auxiliary centerboard yawl. Beam 13 ft. Draft 5 ft. with centerboard up. Two cylinder four cycle Sterling engine with gear installed spring 1923. Hull and sails in good condition. Price \$1800. Write W. S. Cowan, Searport, Maine. Also 18 ft. open motor boat. Price \$275.

For Sale—8 H. P. Fox motor, Joes reverse gear, entire boat trimmings nickel plated, all No. 1 shape, ready to run, for \$100. Henry Freese, Manchester, N. H.

Wanted—A runabout of about 21 to 22 ft. length with a speed of 22 to 25 miles. Must be in best of condition. Chas. F. McNeil, 82 Church St., New Haven, Conn.

WANTED—First class boat builders experienced in cruiser construction. Rochester Boat Works, Inc., 10 Charlotte Station, Rochester, N. Y.

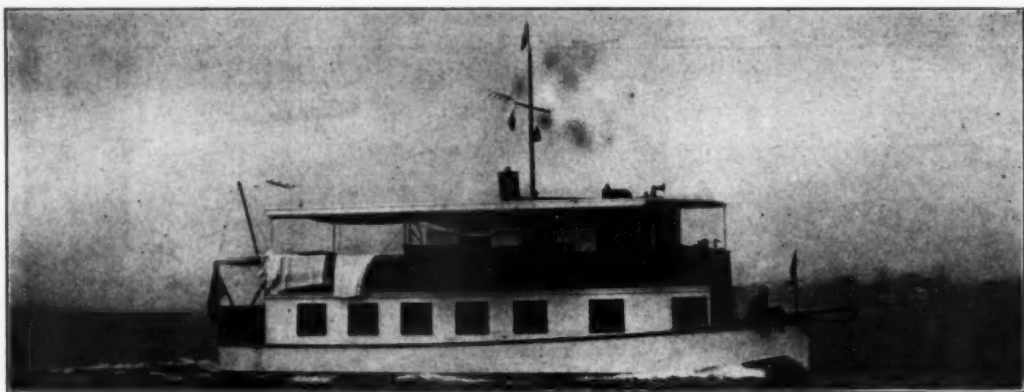
Wanted—Motor boat hull twenty-four to twenty-six feet with or without motor. Must be in first class condition and price reasonable. Also wanted a good 35 to 40 H. P. motor in good condition. E. N. Jackroy, 55 Leroy St., Binghamton, N. Y.

We have buyer for Model "D" Gray in running condition." Gray Marine Motor Company, Detroit, Mich.

FOR SALE—125 H.P., 6 cylinder,  $8\frac{1}{4}$ " x 11", reversible, used Standard marine motor, complete with drip pan, exhaust piping, muffler, air reservoir and bronze propeller. Also 30 to 70 volt generating set with 25 Edison batteries. Write for particulars, Purdy Boat Company, Treadon, Mich.

For Sale—New Model B 32-40 H. P. Red Wing Engine with Aluminum Base. This engine has never been used and can be bought at a low price. P. O. Box 620, New Bedford, Mass.

When writing to advertisers please mention **MOTOR BOATING**, the National Magazine of Motor Boating, 110 West 40th Street, New York



(Copyright Edwin Levick, N. Y.)

## HOUSE BOAT FOR SALE

Ideal for Florida waters.  
 45 feet, 6 inches, single screw; 15 ft.  
 wide, draft 2½ feet.  
 Can inspect New York waters.  
 Two double state rooms, shower bath.  
 Three pipe berths for crew in engine  
 room.  
 Lit throughout by Delco Electric Light  
 system.  
 130 horsepower, 6 cylinder Speedway  
 self starting engine.

Built 1921. Model can be seen.  
 Boat can be put in commission within  
 a week.  
 Thoroughly equipped and furnished  
 throughout.  
 On the upper deck is a galley dining  
 room which seats ten people, and a  
 large outdoor deck.  
 She is controlled absolutely from the  
 bridge and can be run by one man.  
 Price, \$12,000.

**A. JOHNSON**

ROOM 1512

111 Broadway,

NEW YORK



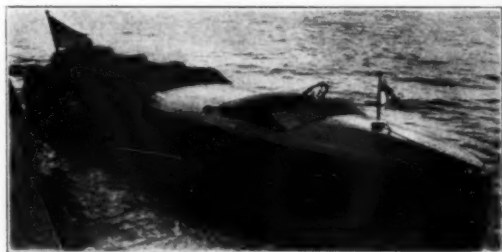
## For Sale

Built by Chris. Smith & Sons, Algonac, Mich., in 1923. Solid mahogany, 26 foot hull. Comfortable and seaworthy—ample room for nine persons. Not primarily a speed boat, but will do 43 real miles per hour. Like new. Completely equipped.

Powered with a six-cylinder Peerless Marine Motor—piston displacement 625 inches; over 200 H.P. at 1900 R.P.M. Motor identical in every respect to the one that finished the 1923 Sweepstakes at Detroit with lower gasoline consumption than any other in the race, beating many boats of twice the piston displacement. Same motor won the Interstate Trophy for runabouts, and the Leary Trophy for hydroplanes at Buffalo International Regatta, September, 1923. Motor installed August, 1923—run less than 20 hours and like new. Motor alone with installation cost \$3,250.

Owner selling because he needs the money. Boat can be seen and demonstrated any time. Will sacrifice for \$4,000.

Boat Owner—2978 Main Street, Buffalo, N. Y.



### FOR SALE AT A BARGAIN

—this practically new 32 ft. runabout with 6 ft. 7 in. beam; 200 H.P. Hall Scott Motor and a speed of about 38 mi. per hr. Mahogany hull built by Albany Boat Co., will accommodate 10 people easily. Has had excellent care, owner wishes to make immediate disposal will make a very attractive price. Apply C. E. Wettlaufer, 101 Oak St., Buffalo, N. Y.

## Don't Pay Cash Buy Your Motor on the Easy Payment Plan

You Can Buy Any Make Motor  
Through Us on the Installment Plan

WRITE FOR TERMS

**J. WORTSMANN**

154 Nassau Street

New York

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Cut 3 1/4 inches deep, six inches wide.....	\$25

Classified advertisements set entirely in small light face type. No extra charge for capitals. Bold face type used at display rate, \$12 per inch, single column.

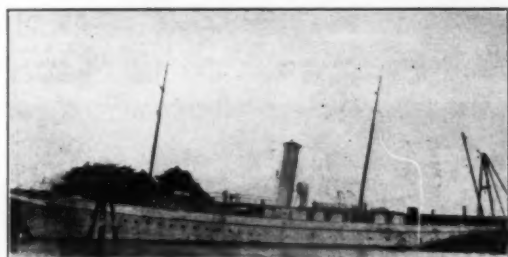
### Opportunities for the Motor Boatman

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MoToR Boating, 119 West 40th St., New York



No. 566—For Sale—High speed runabout 32' x 6' 6" x 2' draft. 12 cylinder Packard Liberty motor—speed up to 40 M.P.H. Outfit new 1923. Reasonable price. Construction of the very best. For further particulars apply to R. M. HADDOCK, Naval Architect and Broker, 50 East 42d St., New York City.



No. 177—Ocean going Steam Yacht L. O. A. 172' L. W. L. 140' Beam 23' 2". Draught 9' 6". Three single and two double staterooms. Hull and engine in good condition. Excellent opportunity to obtain a good boat for a very low price. Paul M. Runyon, 510 Olympia Bldg., New Bedford, Mass.



ROANOKE II—40' x 18'

For Sale—Houseboat, elegantly furnished, completely equipped, electric lighting plant, running water, copper screened throughout, sun parlor, bath and four rooms; a real home for persons desiring quality. May be seen at any time. Foot of 207th Street, west of Broadway, New York City. Inquire for Mr. Waldis.

#### WANTED TO BUY

A first-class, high grade yacht, 56 to 70 ft. 13 to 16 ft. beam; 3 to 5 ft. draft. Must be first class in every way. Preferably of Great Lakes, Matthews, Mathis, Elco, Consolidated, Luders or Lawler make. Speed not less than 12 knots. Single or twin screw. Standard, Buffalo, Winton, Sterling, 20th Century Elco, Speedway or equally good engine. Separate lighting plant. Heating plant preferred. Fully found. Row boat and power tender. Not over ten years old. Inspectable Washington, Baltimore or Norfolk. Must be a real bargain for cash. Prefer to buy from owner direct. In answering, give full and complete description, inventory, name, when and where built, power plant speed condition and lowest net price for cash. Address "Box 1618," Richmond, Va.

#### GREAT OPPORTUNITY "NEW" STEAM ENGINES

FOR SALE (4) Fore and aft compound Steam Engines, standard marine type with link and reversing gear and provided with level throttle valve, intended for U. S. Navy boats. Excellent for 40' to 50' hulls. Complete set of spare parts with each engine, such as pumps, extra valves, pistons, rings, cylinder heads, etc. Any type boiler can be used. No boiler with engine.

**SPECIFICATIONS**  
3 1/4" High pressure. Develop 75 to 100 H.P.  
7 1/4" Low pressure. Turns 36" to 42" propeller.  
Weight crated 900 lbs. Crankshaft 1 1/4".  
450 R.P.M. with about 175 lbs. steam.

PRICE TO BUILD—\$2100.

My price while they last, \$200 each, f.o.b. cars, New York, N. Y.

MURRAY E. BAKER, 875 Woolworth Building, N. Y. C. Phone 6589.

When writing to advertisers please mention

Mahogany Raised deck cruiser (45 x 10), fast, seaworthy. Practically new, twentieth century motor, one man control, equipped demonstrators, \$2,500.00. Standler, 18 LaSalle St., New York.

For Sale—Semi-speed boat, 25 x 5, 28-30 Red Wing Model F engine. Speed, 17 M.; four years old, used only two summers. Decked over partially. Decks and trim mahogany, also inside sheathing made of 3/4" narrow cedar planking. Price \$600. Address, Wm. N. Butler, 125 Trumfull, Hartford, Conn. Boat is at Newport, Vt.

For Sale—10-12 H.P. 2 cycle, 2 cylinder Gray Marine Motor with clutch, universal joint and coils, ready to run. Price, \$85.00. M. C. Sautter, Ada, Ohio.

**WILL SELL** at attractive price Voigtlaender Avus Sport Camera, small size, with all modern improvements. Camera carefully selected by expert; slightly used and represents exceptional value in optical and mechanical details. K. A. Mochringer, 6334 Marchand Street, East Liberty, Pittsburgh, Pa.

#### FOR SALE

Wife dislikes yachting. Therefore will sell my 32 foot Cruising Cat Yacht (sleeps five), which I have been sailing on Barnagat Bay, at a very reasonable price, including all its equipment. For particulars write W. W. McMahon, 6243 North Broad Street, Philadelphia, Pa.

MoToR Boating, the National Magazine of Motor Boating, 119 West 40th Street, New York

1—Red Wing 28-36 H.P., completely overhauled and in perfect condition.... 400.00

1—Gray Model D 4-cylinder, 24 H. P. unit plant with rear starter, completely overhauled ..... 150 00  
Kermath Manufacturing Company, 5580 Commonwealth Avenue, Detroit, Michigan.

Cruising House Boat. Why pay rent. 40 x 11 x 2.6 Standard Engine, 2 cyl. 6 x 8, full equipment. Bargain for cash.

4 cyl. 5 x 6 Buffalo engine unit plant Atwater and Kent ignition ready to run, G. W. Seaman, Newburgh, N. Y.

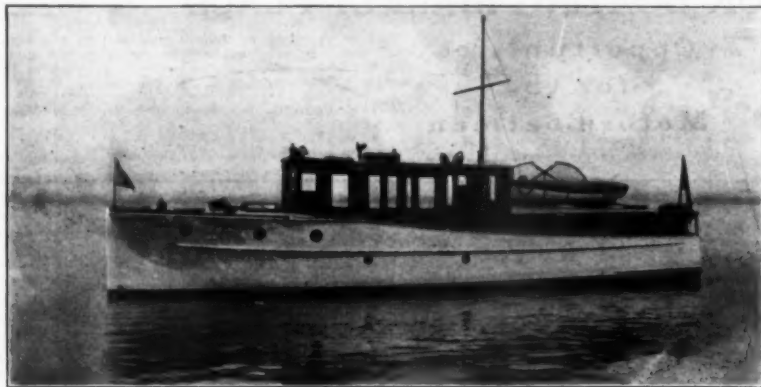
## HOUSE BOAT

45 x 13 x 3' 6, Lathrop 2 cycle, 20 H. P. motor, just overhauled, 2 double staterooms, large main cabin, running water, porcelain sink and wash basin, toilet, stove, ample lockers, spring bunks, mattresses, cooking utensils, recently overhauled. Cost \$3,000, owner moved west. Bargain \$1,500, or exchange keel sloop or yawl.

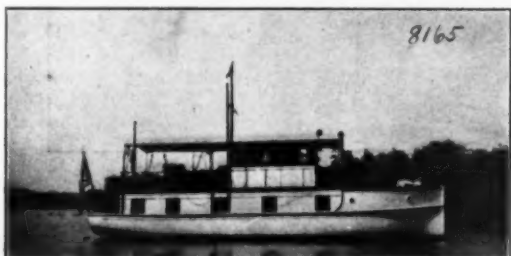
## SMITH

111 5th Avenue, New York  
Room 612 Tel. Ashland 1699



**FOR SALE**

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No. 8165 — For Sale — Cruising houseboat built 1920, made two trips Florida. Seen near New York. 45 x 13 x 3, six cylinder self-starting motor, speed nine miles. Double, single staterooms, bath, lower and deck saloons, sleeps five, crew stateroom. One man controlled, mahogany trim, Delco lighting. Completely equipped, finest condition.

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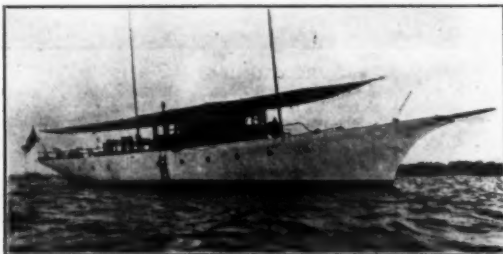


For Sale — Reasonable price, 57 ft. 9 in. x 12 ft x 3 ft. 6 in. draft. Express cruiser, especially built for Florida waters. Inquire A. H. Schmidt, 508 Monroe Avenue, Detroit, Michigan.



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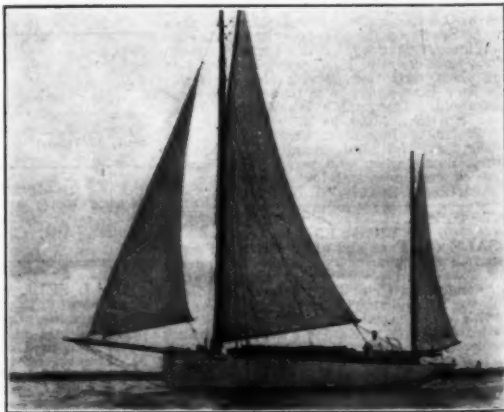
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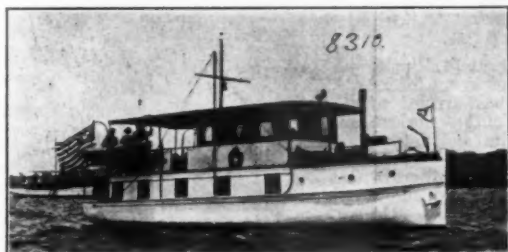
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## Yard and Shop

(Continued from page 42)

Geo. B. Carpenter & Co. have for several years been searching for just such a rope to offer in conjunction with their well known racing sails. The Linen Yacht Rope they have succeeded in developing appears to answer every requirement, and is especially recommended for main and jib sheets, and in fact for all lines subject to much handling.

Samples will be sent to owners or dealers on request to the Company, 440 N. Wells Street, Chicago.

## Elto's Instant Starting Saves Man's Life

From Dr. S. A. Saunderson of Grand Forks, North Dakota, comes a letter to the Elto Outboard Motor Company, containing the following facts:

One night yells were heard about 2 miles out on Cass Lake, indicating that someone was in distress. Dr. Saunderson immediately jumped into his Elto-Powered boat and with a quarter turn of the wheel was off. The yells of distress in the distance were his only guide to destination. Dr. Saunderson writes:

"The Elto was so absolutely definite and dependable in starting on the first quarter turn that we stopped many times on the way out to hear the calls which were all that guided us in the right direction. It would have been a risk with any motor less accurate in starting. We soon had our man in the boat and headed for home. He said he never heard anything so musical as the sound of that motor coming for him. He had ripped the bottom out of his canoe when he caught on a snag."

Dr. Saunderson's quick response to the call for help and the never failing quarter turn start of the Elto, were the means of saving a human life.

## Ripple Completes Long Trip

The new 135-foot Diesel yacht Ripple, designed by Cox & Stevens, for Clifford M. Leonard of Chicago, has arrived at Miami after a successful South American cruise. She will be used in and around Florida waters for the balance of the present winter. This relatively small craft, completed early this winter, has made a remarkable record for seaworthiness. On her maiden voyage she crossed the Atlantic during the stormiest period of November, and fully demonstrated her staunchness. On her arrival she was found to have sustained very little damage, as a result of the heavy weather which she encountered. On her recent cruise to South America, she was in bad weather practically all the time, but notwithstanding the heavy and confused seas, she made her trip on schedule time.

## Wilcox, Crittenden's New Factory

An open house celebration was held last month at the opening of a new addition to the factory plant of the Wilcox, Crittenden Company, Middletown, Conn. This house warming party was varied by a pleasing entertainment for the 300 odd employees who were present. The affair was held in an upper story of the new building which was decorated for the purpose. An address of welcome was made by President William W. Wilcox of the company, and the program of the evening turned over to Fred S. Hurlburt, who had charge of the entertainment. The entertainment was followed by a dance and refreshments.

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## Robert Bosch Distributor in Ohio

The Robert Bosch Magneto Company, Inc. of New York, have appointed as distributors for Robert Bosch magnetos, spark plugs, horns and associated products, the firms of The Columbus Ignition Co., Columbus; Cleveland Ignition Co., Cleveland, and Toledo Ignition Co., Toledo, who will handle the Robert Bosch products in their various cities in the state of Ohio.

## Larger Quarters for Caille in New York

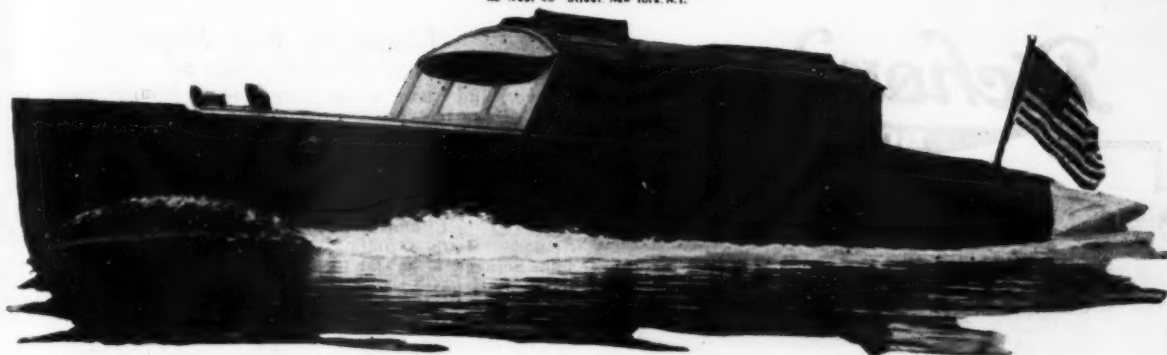
Owing to the constant increase in the demand for outboard motors, the Caille Perfection Co. of Detroit, Mich., have found it advisable to make the E. J. Willis Co. of 85 Chambers St., N. Y., their New York representative. This will give them the benefit of enormous floor space in the Willis store, devoted exclusively to the display of Caille motors.

Here both dealers and users will find a complete line of all the motors manufactured by the Caille Perfection Co. displayed at all times.

Competent men will explain the features of the motors to future owners and will gladly assist the users of all outboard motors with any of their problems.

A large stock of Caille outboard motors, including the new Liberty Twin, also the Bantam inboard motor, will always be on hand for immediate delivery.





*Nearly 18% Faster Than Expected*

MAJOR WILLIAM WHISTLER, a new type inspection boat recently built for the U. S. Engineer Dept., Chicago District, by Richardson Boat Co., No. Tonawanda, N. Y. Hall-Scott LM-6 Marine Engine. Speed 23.53 m. p. h. on official trials.

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## MARINE ENGINE

It is a notable characteristic of Hall-Scott installations that actual boat speed is invariably faster by a safe margin than preliminary estimates and guarantees computed by ordinary formulas of cylinder displacement and horsepower rating.

Take for example the MAJOR WILLIAM WHISTLER, shown above. The Major is a 35' 2" x 8' 9" x 2' 4" inspection boat of extra rugged construction and considerable weight, powered with the 200 h. p. Hall-Scott LM-6. Planked with  $\frac{7}{8}$ " mahogany over 1  $\frac{1}{4}$ " oak frames, this boat is built for the rough weather frequently encountered on Lake Michigan. Propeller is a 20" x 20" Hyde.

The contract speed at full throttle was 20 miles per hour. The trials were run in midwinter in a heavy sea; they showed over 23  $\frac{1}{2}$  miles per hour at 1700 r. p. m., 19 miles at 1400 r. p. m., 15 miles at 1200 r. p. m., and 11 miles at 1000 r. p. m.

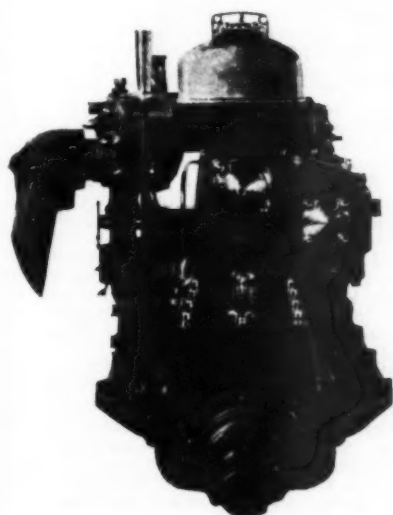
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Factory: Berkeley, California.



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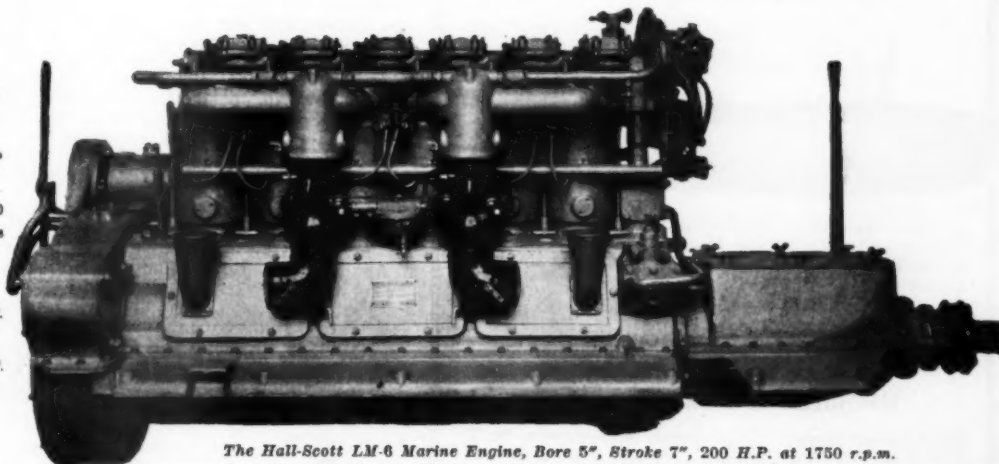
#### Hall-Scott Marine Engines

##### H-S-M Series

- 4 Cylinder, 50-70 H.P.  
Weight 1275 lbs.
- 6 Cylinder, 75-100  
H.P. Weight 1525 lbs.

##### LM Series

- 4 Cylinder, 125 H.P.  
Weight 1175 lbs.
- 6 Cylinder, 200 H.P.  
Weight 1400 lbs.



The Hall-Scott LM-6 Marine Engine, Bore 5", Stroke 7", 200 H.P. at 1750 r.p.m.

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# Richardson

## BOATS



"Major Wm. Whistler," one of two 35' x 8½' Mahogany Sedan Runabouts we have just produced for inspection service of U. S. Engineer Dept. at Chicago. Speed 25 miles per hour with 200 H. P. Hall-Scott LM-6.

**T**HE Richardson method of standardized boat building enables us to give you the size and type of boat you want, embodying the best of design and materials, at the lowest possible cost. Complete and efficiently organized plant with low overhead and direct supervision, manned by expert boat builders who are familiar with the best class of work for private owners and Government contracts.

Richardson boats are built especially to your order from your own architect's plans, or from any of our standardized designs which include runabouts from 20 to 35 ft. and cruisers from 26 to 50 ft. This makes it possible to give you the materials, interior arrangement and finish you want without sacrificing the economy and assurance of standardized hull construction.

*Let us quote on the boat you want.*



Richardson 20 ft. Stock Runabout, Speed 16 miles. We will have several of these ready for spring delivery at a very attractive price. Write today for details and prices.

We also furnish K. D. frames for any type of boat.

**Richardson Boat Company**

370 Sweeney Street

North Tonawanda, N. Y.

## Under the Jolly Roger

(Continued from page 18)

forever, and many a night, as Captain Scraggs paced the deck of the ferryboat, watching the ferry tower loom into view, or the scattered lights along the Alameda shore, he thought longingly of the old Maggie, laid away, perhaps forever, and slowly rotting in the muddy waters of the Sacramento. And he thought of Mr. Gibney, too, away off under the tropic stars, leading the care-free life of a real sailor at last, and of Bartholomew McGuffey, imbibing "pulque" in the "cantina" of some disreputable café. Captain Scraggs never knew how badly he was going to miss them both until they were gone, and he had nobody to fight with except Mrs. Scraggs; and when Mrs. Scraggs (to quote Captain Scraggs) "slipped her cable" in her forty-third year, Captain Scraggs felt singularly lonesome and in a mood to accept eagerly any deviltry that might offer.

Upon a night, which happened to be Scraggs's night off, and when he was particularly lonely and inclined to drown his sorrows in the Bowhead saloon, he was approached by Scab Johnny, and invited to repair to the latter's dingy office for the purpose of discussing what Scab Johnny guardedly referred to as a "proposition."

Upon arrival at the office, Captain Scraggs was introduced to a small, fierce-looking gentleman of tropical appearance, who owned to the name of Don Manuel Garcia Lopez. Scab Johnny first pledged Captain Scraggs to absolute secrecy, and made him swear by the honor of his mother and the bones of his father not to divulge a word of what he was about to tell him.

Scab Johnny was short and to the point. He stated that as Captain Scraggs was doubtless aware, if he perused the daily papers at all, there was a revolution raging in Mexico. His friend, Señor Lopez, represented the under-dogs in the disturbance, and was anxious to secure a ship and a nifty sea captain to land a shipment of arms in Lower California. It appeared that at a sale of condemned army goods held at the arsenal at Benicia, Señor Lopez had, through Scab Johnny, purchased two thousand single-shot Springfield rifles that had been retired when the militia regiments took up the Krag. The Krag in turn having been replaced by the modern magazine Springfield, the old single-shot Springfields, with one hundred thousand rounds of 45-70 ball cartridges, had been sold to the highest bidder. In addition to the small arms, Lopez had at present in a warehouse three machine guns and four 3-inch breech-loading pieces of field artillery (the kind of guns generally designated as a "jackass battery," for the reason that they can be taken down and transported over rough country on mules) — together with a supply of ammunition for same.

"Now, then," Scab Johnny continued, "the job that confronts us is to get these munitions down to our friends in Mexico. You know, as well as anybody, Scraggs, that while our government makes no bones of selling a lot o' retired rifles an' ammunition, nevertheless it's goin' to develop a heap o' curiosity regardin' what we do with 'em. If we're caught sneakin' 'em into Mexico we'll spend the rest of our lives in a Federal penitentiary for bustin' the neutrality laws. All them rifles an' the ammunition is cased an' in my basement at the present moment — and the government agents knows they're there. But that ain't troublin' me. I rent the saloon next door an' I'll cut a hole through the wall from my cellar into the saloon cellar, carry 'em through the saloon into the back yard, an' out into the alley half a block away. I'm watched, but I got the watcher spotted — only he don't know it. Our only trouble is a ship. How about the Maggie?"

"I'd have to spend about two thousand dollars on her to put her in condition for the voyage," Scraggs replied.

"Can do," Scab Johnny answered him briefly, and Señor Lopez nodded acquiescence. "You discharge on a lighter at Descanso Bay about twenty miles below Ensenada. What'll it cost us?"

"Ten thousand dollars, in addition to fixin' up the Maggie. Half down and half on delivery. I'm riskin' my hide an' my ticket an' I got to be well paid for it."

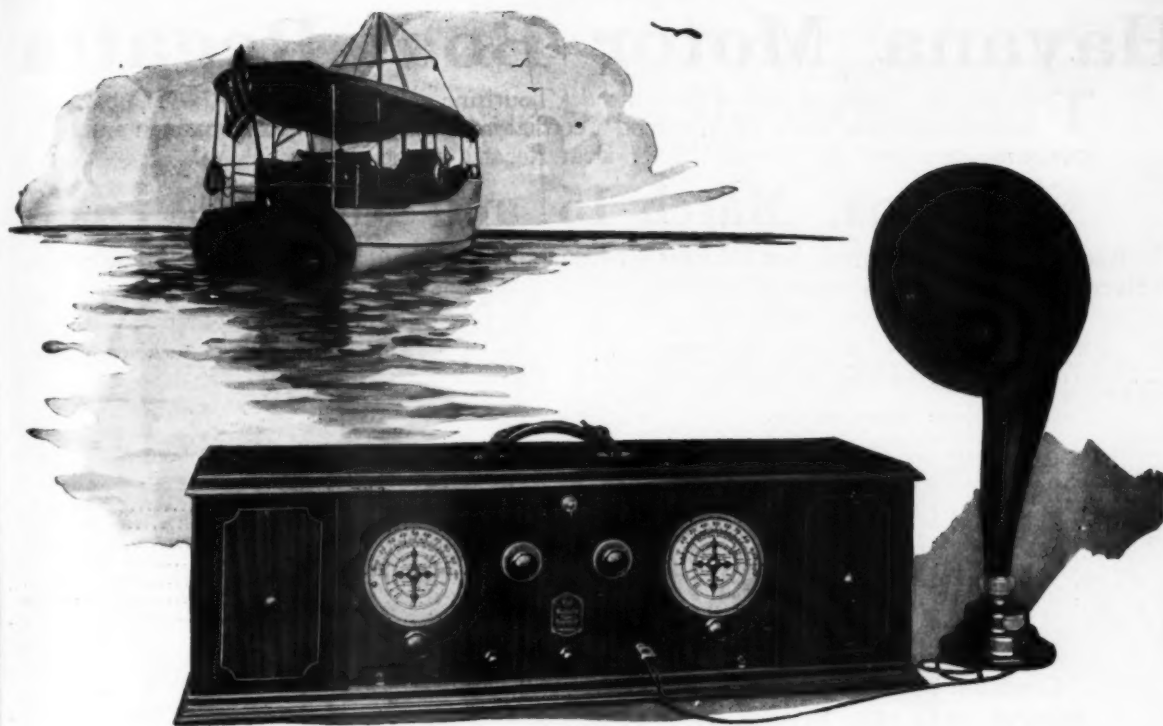
Again Señor Lopez nodded. What did he care? It wasn't his money.

"I'll furnish you with our own crew just before you sail," Scab Johnny continued. "Get busy."

"Gimme a thousand for preliminary expenses," Scraggs demanded. "After that speed is my middle name."

The charming Señor Lopez produced the money in crisp new bills and, perfect gentleman that he was, demanded no receipt. As a matter of fact, Scraggs would not have given him one.

(Continued on page 72)



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Same as above, but without Radiotrons or Loudspeaker \$220



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Radiola Super-Heterodyne is a new and remarkable Radiola. So sensitive that it brings in record distances on the loudspeaker. So selective that you get far stations with no interference from the near ones. So simple to operate that once you have marked each station on the dials, a swing of two knobs to the marked places picks up the station you want—instantly. And clear—loud—melodious!

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# Havana Motor Boat Regatta

The Comision Nacional para el Fomento del Turismo en Cuba, of HAVANA, Cuba, and the Habana Yacht Club, extend a cordial invitation to all motor boatmen and sportsmen to attend the Annual Motor Boat Regatta to be held at

## Havana, March 15 and 16, 1924

Races have been arranged for Express Cruisers and Runabouts. Entries have already been received for the runabout classes as follows:

### SWEEPSTAKES—LIBERTY CLASS

Open to Displacement boats of over 25 feet in length powered with motors of not over 1350 cubic inches and Displacement boats of over 32 feet in length powered with motors of not over 1650 cubic inches piston displacement.

(Qualifying speed: 40 miles per hour.)

Boat	Owner
Adieu II.....	Webb Jay.....Chicago, Ill.
Musketeer.....	Horace Dodge.....Detroit, Mich.
Baby Cub.....	Howard Lyons.....New York, N. Y.
Sue J.....	Webb Jay.....Miami, Florida
Peerless Irene.....	V. A. Searles.....Atlantic City
Nine Ninety Nine.....	Edsel Ford.....Detroit, Mich.
Mary.....	Col. E. H. R. Green.....Terrell, Texas
Wilgold.....	J. A. Williams.....Buffalo, N. Y.
Miss Mary.....	E. L. Grimm.....Buffalo, N. Y.
Bear Cat III.....	E. M. Gregory.....Detroit, Mich.
Bear Cat IV.....	Wilbur H. Young.....New York, N. Y.
Pee Bee II.....	W. N. Churchill.....Burlington, Ia.
Pal o' Mine.....	C. M. Sorensen.....Miami Beach, Fla.

### GENTLEMEN'S RUNABOUT CLASS

Open to Displacement boats of over 25 feet in length powered with motors of not over 825 cubic inches.

(Qualifying speed: 35 miles per hour.)

Boat	Owner
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Bear Cat I.....	E. M. Gregory.....Detroit, Mich.
Bear Cat III.....	E. M. Gregory.....Detroit, Mich.
Bear Cat IV.....	Wilbur H. Young.....New York, N. Y.
Wilgold.....	J. A. Williams.....Buffalo, N. Y.
Pee Bee II.....	W. N. Churchill.....Burlington, Ia.
Pal o' Mine.....	C. M. Sorensen.....Miami Beach, Fla.

Full details may be obtained from

Comision Nacional para el Fomento del Turismo en Cuba, Havana, Cuba  
 SENOR RAFAEL POSSO, care of Habana Yacht Club, Havana, Cuba  
 or from the Editor of MoToR Boating

## Under the Jolly Roger

(Continued from page 70)

The two weeks that followed were busy ones for Captain Scraggs. The day after his interview with Scab Johnny and Don Manuel he engaged an engineer and a deck hand and went up the Sacramento to bring the Maggie down to San Francisco. Upon her arrival she was hauled out on the marine ways at Oakland creek, cleaned, caulked, and some new copper sheathing put on her bottom. She was also given a dash of black paint, had her engines and boilers thoroughly overhauled and repaired, and shipped a new propeller that would add at least a knot to her speed. Also, she had her stern rebuilt. And when everything was ready, she slipped down to the Black Diamond coal bunkers and took on enough fuel to carry her to San Pedro; after which she steamed across the bay to San Francisco and tied up at Fremont Street wharf.

The cargo came down in boxes, variously labelled. There were "agricultural implements," a "cream separator," a "windmill," and half a dozen "sewing machines," in addition to a considerable number of kegs alleged to contain nails. Most of it came down after five o'clock in the afternoon after the wharfinger had left the dock, and as nothing but a disordered brain would have suspected the steamer Maggie of an attempt to break the neutrality laws, the entire cargo was gotten aboard safely and without a jot of suspicion attaching to the vessel.

When all was in readiness, Captain Scraggs incontinently "fired" his deckhand and engineer and inducted aboard a new crew, carefully selected for their filibuster virtues by Scab Johnny himself. Then while the new engineer got up steam, Captain Scraggs went up to Scab Johnny's office for his final instructions and the balance of the first installment due him.

Briefly, his instructions were as follows: Upon arrival off Point Dume on the southern California coast, he was to stand in close to Dume Cove under cover of darkness and show two green lights on the masthead. A man would come alongside presently in a small boat, and climb aboard. This man would be the supercargo and the confidential envoy of the insurrecto junta in Los Angeles. Captain Scraggs was to look to this man for orders and to obey him implicitly, as upon this depended the success of the expedition. This agent of the insurrecto forces would pay

him the balance of five thousand dollars due him immediately upon discharge of the cargo at Descanso Bay. There was a body of insurrecto troops encamped at Megano ranch, a mile from the beach, and they would have a barge and small boats in readiness to lighten the cargo. Scab Johnny explained that he had promised the crew double wages and a bonus of a hundred dollars each for the trip. Don Manuel Garcia Lopez paid over the requisite amount of cash, and half an hour later the Maggie was steaming down the bay on her perilous mission.

The sun was setting as they passed out the Golden Gate and swung down the south channel, and with the wind on her beam, the aged Maggie did nine knots. Late in the afternoon of the following day she was off the Santa Barbara channel, and about midnight she ran in under the lee of Point Dume and lay to. The mate hung out the green signal lights, and in about an hour Captain Scraggs heard the sound of oars grating in rowlocks. A few minutes later a stentorian voice hailed them out of the darkness. Captain Scraggs had a Jacob's ladder slung over the side and the mate and two deckhands hung over the rail with lanterns, lighting up the surrounding sea feebly for the benefit of the lone adventurer who sat muffled in a great coat in the stern of a small boat rowed by two men. There was a very slight sea running, and presently the men in the small boat, watching their opportunity by the ghostly light of the lanterns, ran their frail craft in under the lee of the Maggie. The figure in the stern sheets leaped on the instant, caught the Jacob's ladder, climbed nimbly over the side, and swore heartily in very good English as his feet struck the deck.

"What's the name of this floating coffin?" he demanded in a chain-locker voice. It was quite evident that even in the darkness, where her many defects were mercifully hidden, the Maggie did not suit the special envoy of the Mexican insurrectos.

"American steamer Maggie," said the skipper frigidly. "Scraggs is my name, sir. And if you don't like my vessel—"

"Scraggsy!" roared the special envoy. "Scraggsy, for a thousand! And the old Maggie of all boats! Scraggsy, old tarpot, your fin! Duke me, you dog-goned old salamander!"

"Gib, my dear boy!" shrieked Captain Scraggs and cast himself into Mr. Gibney's arms in a transport of joy. Mr.

(Continued on page 74)

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## Under the Jolly Roger

(Continued from page 72)

Gibney, for it was indeed he, pounded Captain Scraggs on the back with one great hand while with the other he crushed the skipper's fingers to a pulp, the while he called on all the powers of darkness to witness that never in all his life had he received such a pleasant surprise.

It was indeed a happy moment. All the old animosities and differences were swallowed up in the glad hand-clasp with which Mr. Gibney greeted his old shipmate of the green-pea trade. Scraggs took him below at once and they pledged each other's health in a steaming kettle of grog, while the Maggie, once more on her course, rolled south toward Descanso Bay.

"Well, I'll be keel-hauled and skull-dragged!" said Captain Scraggs, producing a box of two-for-a-quarter cigars and handing it to Mr. Gibney. "Gib, my dear boy, wherever have you been these last three years?"

"Everywhere," replied Mr. Gibney. "I have been all over, mostly in Panama and the Gold Coast. For two years I've been navigatin' officer on the Colombian gunboat Bogota. When I was a young feller I did a hitch in the navy and become a first-class gunner, and then I went to sea in the merchant marine, and got my mate's license, and when I flashed my credentials on the president of the United States of Colombia he give me a job at 'dos cientos pesos oro' per. That's Spanish for two hundred bucks gold a month. I've been through two wars and I got a medal for sinkin' a fishin' smack. I talk Spanish just like a native, I don't drink no more to speak of, and I've been savin' my money. Some day when I get the price together I'm goin' back to San Francisco, buy me a nice little schooner, and go tradin' in the South Seas. How they been comin' with you, Scraggsy, old kiddo?"

"Lovely," replied Scraggs. "Just simply grand. I'll pull ten thousand out of this job."

Mr. Gibney whistled shrilly through his teeth.

"That's the ticket for soup," he said admiringly. "I tell you, Scraggs, this soldier of fortune business may be all right, but it don't amount to much compared to being a sailor of fortune, eh, Scraggsy? Just as soon as I heard there was a revolution in Mexico I quit my job in the Colombian navy and come north for the pickin's. . . . No, I ain't been in their rotten little army. . . . D'ye think I want to go around killin' people? . . . There ain't no pleasure gettin' killed in the mere shank of a bright and prosperous life. . . . a dead hero don't gather no moss, Scraggsy. Reads all right in books, but it don't appeal none to me. I'm for peace every time, so right away as soon as I heard of the trouble, says I to myself: 'Things has been pretty quiet in Mexico for twenty years, and they're due to shift things around pretty much. What them peons need is a man with an imagination to help 'em out, and if they've got the money, Adelbert P. Gibney can supply the brains.' So I comes north to Los Angeles, shows the insurrecto junta my medal and my honourable discharges from every ship I'd ever been in, includin' the gunboat Bogota, and I talked big and swelled around and told 'em to run in some arms and get busy. I framed it all up for this filibuster trip you're on, Scraggsy, only I never did hear that they'd picked on you. I told that coffee-colored rat of a Lopez man to hunt up Scab Johnny and he'd set him right, but if anybody had told me you had the nerve to run the Maggie in on this deal, Scraggsy, I'd a-called him a liar. Scraggs, you're mucho-bueno—that is, you're all right. I'm so used to talkin' Spanish that I forget myself. Still, there's one end of this little deal that I ain't exactly explained to all hands. If I'd a-known they was charterin' the Maggie, I'd have blocked the game."

"Why?" demanded Captain Scraggs, instantly on the defensive.

"Not that I'm holdin' any grudge agin you, Scraggsy," said Mr. Gibney affably, "but I wouldn't a-had you no more now than I would when we was runnin' in the green-pea trade. It's because you ain't got no imagination, and the Maggie ain't big enough for my purpose. Havin' the Maggie sort of puts a crimp in my plans."

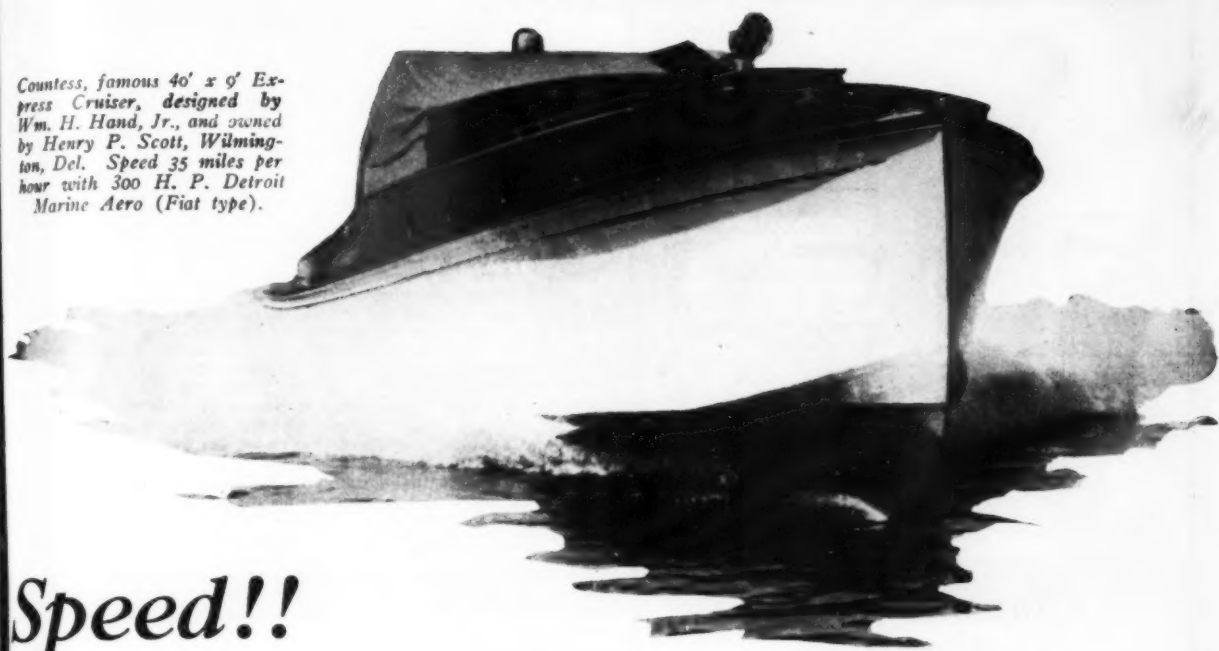
"Rot," snapped Captain Scraggs. "I've had the Maggie overhauled and shipped a new wheel, and she's a mighty smart little boat, I'll tell you. I'll land them arms in Descanso Bay, all right."

"I know you will," said Mr. Gibney sadly. "That's just what hurts. You see, Scraggsy, I never intended 'em for Descanso Bay in the first place. There's a nice healthy

(Continued on page 76)



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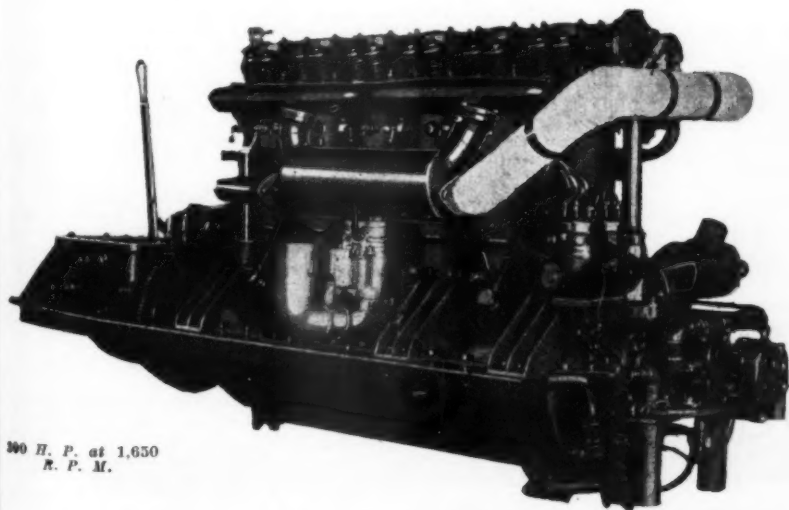


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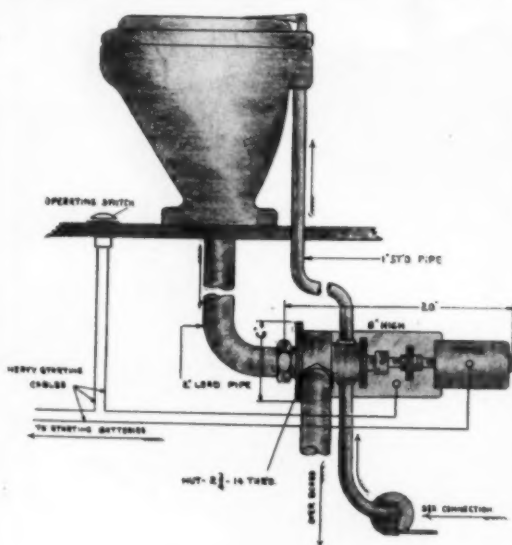
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## Under the Jolly Roger

(Continued from page 74)

little revolution fomentin' down in the United States of Colombia, with Adelbert P. Gibney playin' both ends to the middle. And there's a dog-hole down on the Gold Coast where I intended to land this cargo, but now that Scab Johnny's gone to work and sent me a bay scow instead of a sea-goin' steamer, I'm in the nine-hole instead o' dog-hole. I can never get as far as the Gold Coast with the Maggie. She can't carry coal enough to last her."

"But I thought these guns and things was for the Mexicans," quavered Captain Scraggs. "Scab Johnny and Lopez told me they was."

Mr. Gibney groaned and hid his face in his hands. "Scraggsy," he said sadly, "it's a cinch you ain't used the past four years to stimulate that imagination of yours. Of course they was purchased for the Mexicans, but what was to prevent me from lettin' the Mexicans pay for them, help out on the charter of the boat, and then have me divert the cargo to the United States of Colombia, where I can sell 'em at a clear profit, the cost bein' nothin' to speak of? Now you got to come buttin' in with the Maggie, and what happens? Why, I got to be honest, of course. I got to make good on my bluff, and what's in it for me? Nothin' but glory. Can you hock a chunk of glory for ham and eggs, Phineas Scraggs? Not on your life. If it hadn't been for you buttin' in with your blasted, rotten hulk of a fresh-water skiff, I'd—"

Mr. Gibney paused ominously and savagely bit the end of his cigar. As for Captain Scraggs, every drop of blood in his body was boiling in defense of the ship he loved.

"You're a pirate," he shrilled.

"And you're just as big a hornet as you ever was," replied Mr. Gibney. "Always buzzin' around where you ain't wanted. But still, what's the use of bawlin' over spilt milk? We'll drop into San Diego for a couple of hours and take on coal, and about sunset we'll pull out and make the run down to Descanso Bay in the dark. We might as well forget the past and put this thing through as per program. Only I saw visions of a schooner all my own, Scraggsy, and—well, what's the use? What's the use? Scraggsy, you're a natural-born mar-plot. Always buttin' in, buttin' in, buttin' in, fit for nothin' but the green-pea trade. However, I guess I can turn into my old berth and get some sleep. Put the old girl under a slow bell and save your coal. We'll have to fool away four or five hours in San Diego anyhow and there ain't no sense in crowdin' the old hulk."

"Gib," said Captain Scraggs, "was that really your lay—to steal the cargo, double-cross the insurrecto junta and sell out to furrin' country?"

"Of course it was," said Mr. Gibney pettishly. "They all do such things in the banana republics. Why should I be an exception? There's half a dozen different gangs fightin' each other and the government in Mexico, and if I don't deliver these arms, just see all the lives I'll be savin'. And after I got the cargo into Colombia and sold it, I could have peached on the rebels there, and got a reward for it, and saved a lot more lives, and come away rich and respected."

"By the Lord Harry," said Captain Scraggs, "but you've got an imagination, Gib. I'll swear to that. Gib, I take off my hat to you. You're all tight and shipshape and no loose ends bobbin' around you. Don't tell me th' scheme's got t' fall through, Gib. Great snakes, don't tell me that. Ain't there some way o' gettin' around it? There *must* be. Why, Gib, my dear boy, I never heard of such a grand lay in my life. It's a absolute winner. Don't give up, Gib. Oil up your imagination and find a way out. Let's get together, Gib, and make a little money. Dang it all, Gib, I been lonesome ever since I seen you last."

"Well," replied Mr. Gibney, "I'll turn in and try to scheme a way out, but I don't hold out no hope. Not a ray of it. I'm afraid, Scraggsy, we've got to be honest."

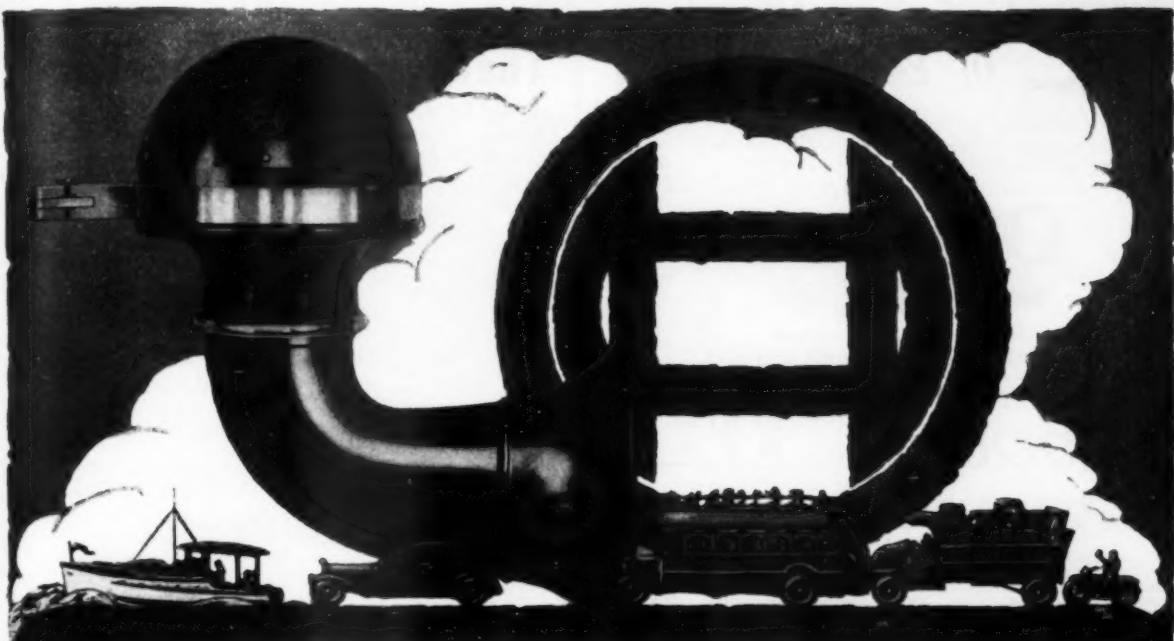
Saying which, Mr. Gibney hopped up into his berth, stretched his huge legs, and fell asleep with his clothes on. Captain Scraggs looked him over with the closest approach to affection that had ever lightened his cold gray eye, and sighing heavily, presently went on deck. As he passed up the companion-way, the first mate heard him murmur:

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(To be continued)

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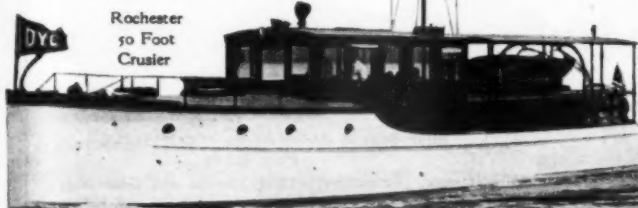
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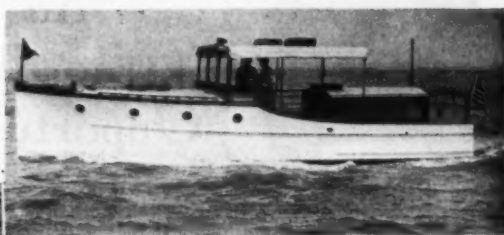
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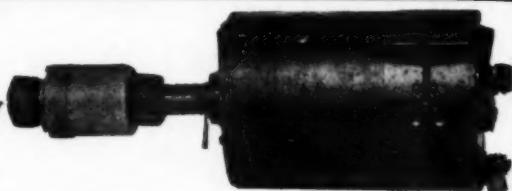
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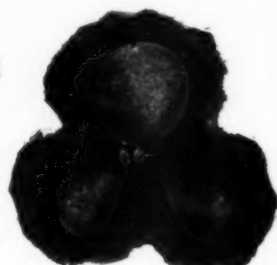
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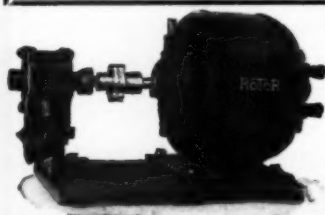
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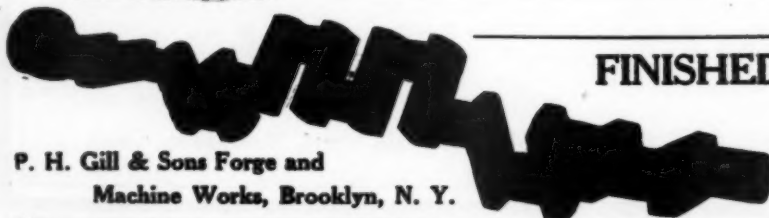


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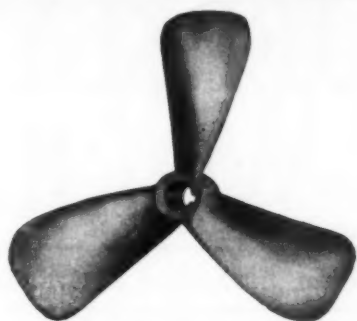
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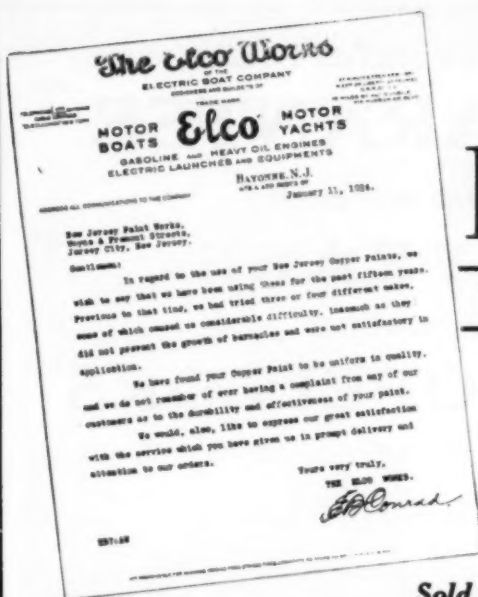
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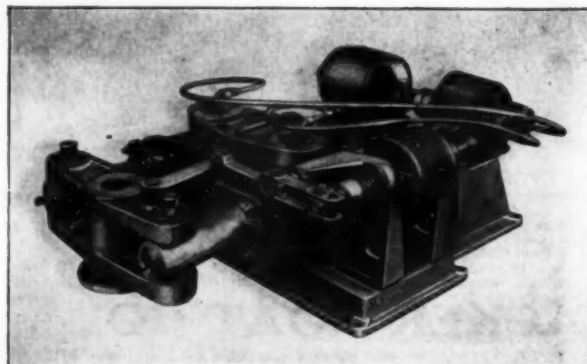
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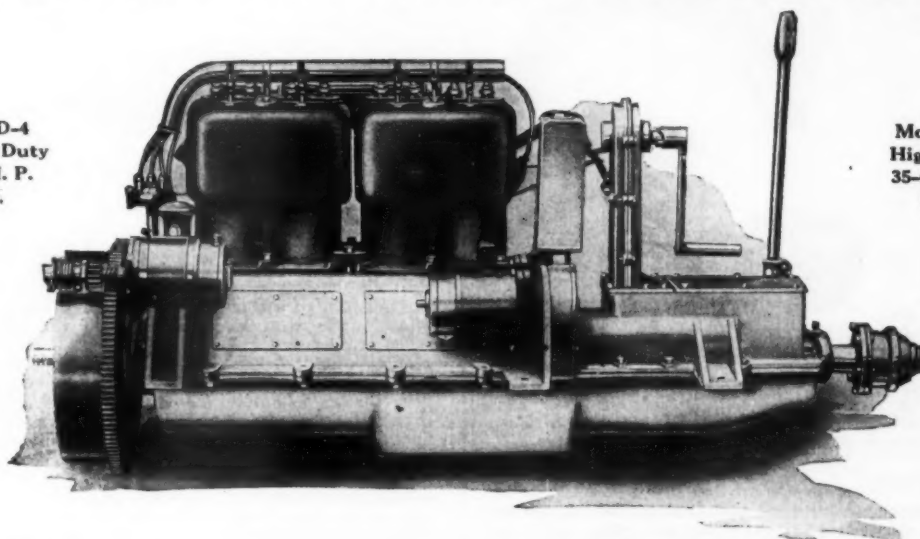
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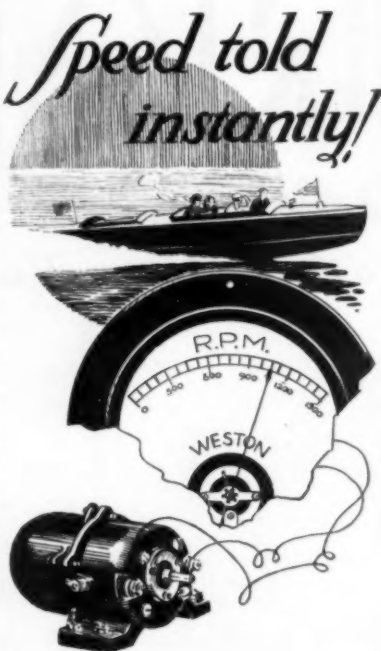
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## An Easily Constructed Sliding Berth

(Continued from page 34)

**A** SLIDING or extension berth for a small boat should be as simple and easily constructed as possible. It should also be easy to operate and slide freely. When in use as a berth there should be a high bunk board along the outer edge to keep the blankets from sliding off and the occupant from rolling out in bad weather.

The berth shown has metal slides as they provide the necessary strength without taking up much space and are less liable to stick than wood. The pieces A, B, C, and D, are of ordinary wrought iron and should be galvanized to make a first class job. A should be drilled and tapped for 14-20 flat head machine screw about 1 1/4 inches long. B should not be tapped but should have clearance holes about 9/32 inch so the screws will go right through into A. C and D are simply drilled for 3/4 inch flat head stove bolts, D being countersunk for the heads. The holes may be spaced about 4 inches or laid out to suit the lumber used in the bottom if desired; so two bolts will come in each piece. Of course A and B should be drilled together and also C and D so the bolts will go through both pieces without trouble. If these pieces are all laid out and center punched, they may be taken to a shop and quickly drilled at small expense. The bunk board shown should be at least 9 or 10 inches high depending on the thickness of cushions and bedding available. It is hinged as shown so as to fold down flat when not needed and as the hinges are depended on to hold this board vertical,

three or four small strap hinges should be used. If the hinges are let in flush the boards can be made to fold down close together.

Another board is hinged along the back edge of this sliding berth. This board also folds down when the berth is not extended and together with the wide bunk board hinged to front edge should make practically a level top for the cushion. When extended this hinged piece at the back folds out filling the space.

As the berths in every boat are of a different width and shape, no dimensions are given. However the plan can easily be worked out and the berth hinged and divided so the folded portion and bunk board will practically cover the top making a level surface for the cushions when used as a seat.

Where the boat is a heavy one of fairly good size, the material for this sliding berth can be the ordinary 13/16 inch stock lumber; but where the boat is quite small and weight and space of considerable importance, 1/2 inch material will answer quite as well, provided the boards are properly cleated and strapped.

C. H. C., Saginaw, Mich.

## How to Clean and Overhaul an Engine

(Continued from page 37)

versa, will not occur. The rings are always pinned in such a position as not to allow the ring gaps to pass the ports, or the ends of the rings would have a tendency to catch the ports as they passed. The sketch will show the best place to fit a pin through the ring, so as not to weaken it. Pinning rings into position is very good, and makes toward more even wearing of both the rings and cylinder bore; however, on the four cycle engine the rings are always pinned so that the ring gaps will be on thirds.

### Flywheel

While the flywheel is only a chunk of iron, it is a very important part of the motor assembly, and has a very noticeable effect on the motor's operation under throttled conditions or when accelerating, in boats of considerable weight. High speed motors, when fitted in cruisers, are very apt to show this fault, and we see many cases of stalled engines when clutches have been thrown in before the engine revolutions have been high enough to allow the flywheel momentum to carry the suddenly applied load; this, in turn, throws an overload on all working parts or may even cause breakages. This fault can be very easily overcome by shrinking on a steel band around the flywheel rim, of sufficient thickness to give the desired weight; and a job of this nature can be done at most any blacksmith or machine shop, and at a very reasonable figure. In assembling, be sure and get all keys, set-screws or bolts, set up tight, as a loose flywheel will make a very bad knock, and one which is very destructive to the motor. In cases where the flywheel is loose on crankshaft, have hub bored out and bushed to fit crankshaft very neat (the best repair is to have the crankshaft end turned taper, the flywheel hub bore taper, bushing made to fit, key made to fit, end of crankshaft threaded, and the flywheel pulled into position on the key and bushing, by the nut). If the hub is found to be cracked, as from flywheel having been loose, or key being driven in too hard, have a steel band shrunk over hub. Never shim a loose flywheel key, as the strains are too heavy, rather get a piece of key stock and fit a new one.

### Cylinders and Valves

After all carbon deposits have been scraped out, give the water jackets a good cleaning by either flushing with a strong lye solution or by taking cylinders to some place where a stream of steam can be forced through. This will remove most deposits; however, it is best to get a piece of stiff wire and poke around the bottom of jackets, around valve pockets and in cylinder head jackets, then give the jackets another flushing. Where it is impossible to reach around pockets, etc., drill a small hole at some point where you will be able to reach the desired spot with wire, and as soon as everything is cleaned out, drill, tap, run in a pipe plug dipped in white lead and oil, and then hack-saw off and file flush with casting. Give cylinder bore and entire outside of cylinder casting a good washing with gasoline, then inspect bore for scores and caliper to see if out of round or egg shaped. Scores or scratches can be repaired by having an alloy fused into the defect, and after finishing flush, the job is guaranteed to last as long as the rest of the cylinder. Any number of jobbers are handling this work, and it is better than welding, as the cylinders do not have to be bored, the pistons and rings can be used again, and there is no danger of distorting the cylinder casting from overheating. Out of round, or egg shaped cylinders, can only be rebored or reground, along with fitting of new pistons and rings; and, while the cost is a little high, the result is very gratifying, as the motor's per-

(Continued on page 88)





## Remember— It's Johnson who puts Motor Boating within the reach of Everybody

**N**O matter what you think now—or what anybody has told you—about outboard motors in general, go get the nearest Johnson dealer to give you a free demonstration of the Johnson Outboard Motor.

A ride in the boat will set the Johnson Motor apart from all other outboard motors in your mind. You'll like its freedom from vibration, its quiet, powerful-sounding purr, the feeling of perfectly controlled speed, the way it can be stopped in a boat's length from full speed ahead, "warped" into the dock, started in any direction, throttled down to slowest trolling speed for hours.

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The Johnson Outboard Motor is the only motor that you can attach to any type boat or canoe without altering the boat.

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## How to Clean and Overhaul An Engine

(Continued from page 86)

formance will be found to be as good as when new. When the cylinders have worn, and it becomes necessary to fit new rings, inspect top of bore for the ridge which is left at the end of the ring travel. This can be easily removed by scraping out with a bearing scraper, and even though the old rings are used, the connecting or main shaft bearings renewed or raised, this should be done; as, when the rings come to the top of their stroke, they will strike this ridge and make a knock. Where cracks are found, either on inside or outside of cylinders running through into the waterjacket, have them welded, as that will be the only permanent repair, outside of replacement of the entire casting. Of course, where the crack is on the outside of the cylinder, it can easily be patched, as explained in previous numbers of MoToR Boating, but, if the welding job is done correctly, finished off smooth, and given a coat of enamel, the job cannot be seen.

Clean valves, inspect faces of valves and seats, as well as stems; and, if found worn, burnt badly or warped, replace with new ones. If everything is found to be in good condition, grind in slowly, as shown in sketch, until a continuous fine line or seat is seen on both the valve face and valve seat; clean out all compound, rotate valve on seat with only oil on it to polish, and then assemble. In grinding use coarse compound first, then finish with the fine; and don't spin valve around continuously in one direction, rather, make about half a turn one way, then back, do this several times, move valve about half-way around, repeat, and so on until you have finished. Use only the weight of your hand and arm applied to the screw driver, brace and bit, or valve grind tool, otherwise, the pressure will only tend to force the compound out from between the valve face and valve seat. Where new valves are fitted, it is best to secure a valve seat reamer and true up the seats, or it will take a long time grinding before you will get a good fit. Worn guides should be bushed, or renewed if of the removable type, as they will make a streaky mixture on the intake side, and leak fumes on the exhaust side. Where valve springs are found to have lost their tension, renew them, as stretching, by driving a wedge or a chisel in between the coils, is only a temporary job. In assembling set valve tappets to the thickness of a visiting card, or less; and if this is done when the motor is hot, as after a run, a very neat adjustment can be made which will eliminate a lot of noise. Valve timing and its relation to power output is a subject in itself; however, the following setting will give good results:

Motors of from 400 to 600 r.p.m.

Exhaust opens from 25 to 35 degrees in advance of bottom center, the closing of course depending on the contour of the cams, but should close about 5 degrees after top center.

Intake opens 10 degrees after top center, and should close about 10 to 20 degrees after bottom center.

Motors of from 600 to 1,000 r.p.m.

Exhaust opens 40 to 45 degrees in advance of bottom center, and should close from 5 to 10 degrees after top center.

Intake opens about 10 degrees after top center, or as soon as exhaust valve closes, and closes about 20 to 25 degrees after bottom center.

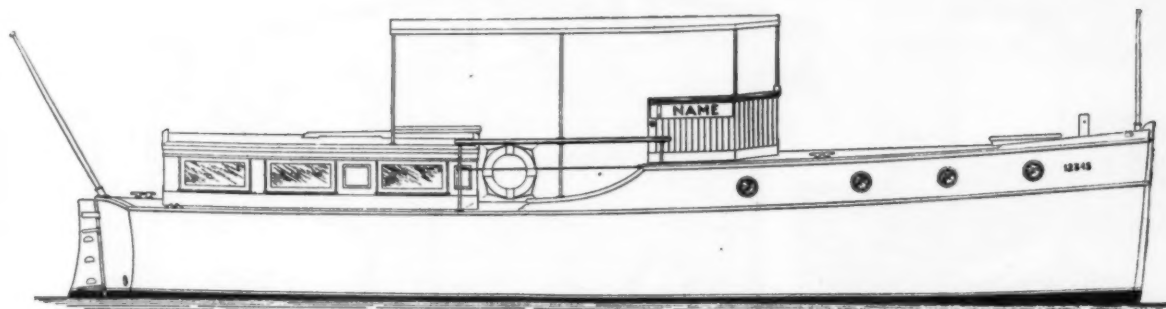
As these settings are approximate, it is best to get in touch with the factory or agent for your particular motor, if in any doubt as to the correct timing; however, if the motor is an old one, an orphan (one which its manufacturer has gone out of business), or one of the home-built species, then the above setting will be found to work out satisfactorily.

### Carburetor

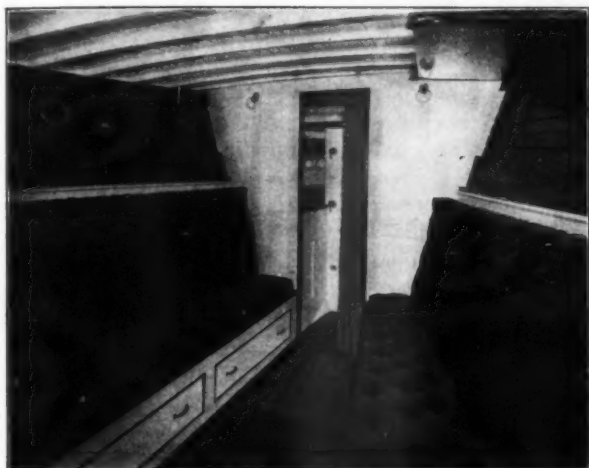
If you are not capable of handling the adjustments on this delicate piece of mechanism, I would send it to someone who is, and have it given a thorough inspection, cleaning and adjustment; however, if you feel that you can handle it, go to it. As soon as it has been dismantled, clean well, examine for evidence of defects, dry out, clean and shellac float, level float and set to proper height in bowl, renew packing in gland of needle orifice, examine and adjust air valves and springs, renew any defective gaskets, etc. Make a temporary adjustment, and as soon as motor is started, the final one can be made. Air pipes leading from the base or exhaust manifold are fine, and if your motor is not so equipped, by all means do so.

(Continued on page 96)

# "CRUISEABOUT"



A 39 Ft. Standardized Double Cabin Cruiser



The forward cabin sleeps four. The large and completely equipped galley is a separate room.

**C**RUISEABOUT is a bridge-deck double cabin cruiser, 39 feet over all, 10 feet beam and 3 feet draft. Arranged for one man control and sleeps six below decks, with the privacy of two cabins, or sleeps seven counting a pipe berth in the engine room.

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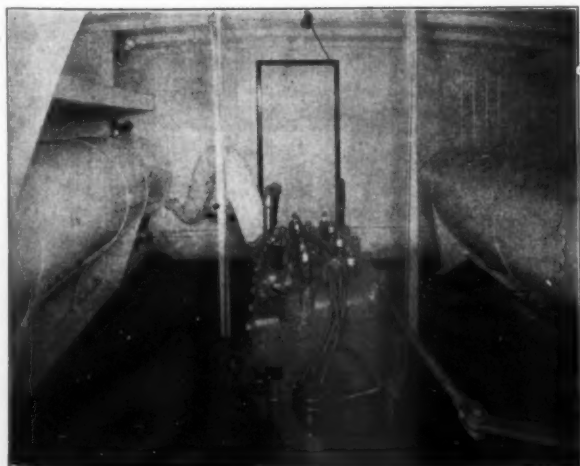
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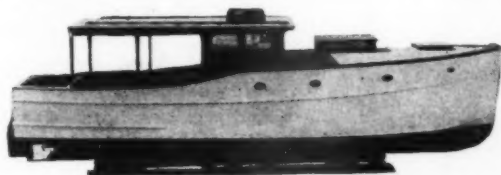
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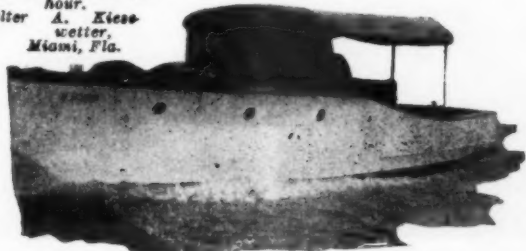
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# Here's A Real Boat

A Standardized Cruiser Designed after the  
Suggestions of Several Hundred Experienced Boat Owners

By Walter F. Bailey

Off for a cruise on the  
*International-32.*



**J**UST about now there are several thousand people struggling through the same mental process. It runs something like this: "I know, I could have a lot of fun with a boat this summer. But I don't know what kind of a boat I want, or what I need. I don't know how to go about buying a boat. I haven't time to follow through the designs and construction. What shall I do?"

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The cabin is 11 ft. long with 6 ft. of headroom in the clear.





ter if you are near the builder's yard. Incidentally, it's much easier to interest "friend wife" in a real boat than in a set of blueprints.

Consider the International-32, one of the oldest and most successful standardized cruisers on the market. This boat was really designed by several hundred experienced boat owners; they were asked to tell the features they had found most desirable for a boat to meet the average owner's requirements. Their ideas were collected, tabulated and combined into a composite set of specifications that called for a 32-foot raised deck cruiser. Then these practical suggestions were placed in the hands of one of the country's foremost small boat architects, Mr. George F. Crouch, who developed them into the design of the International-32, a typical "Everybody's Motor Boat."

The idea worked out perfectly. The very first year more than a score of the International-32 were built, and twice as many could have been sold if the yard had been able to turn them out fast enough.

Its success was natural. Here was a boat that would cost between \$5000 and \$6000 to construct by ordinary methods. By standardization and quantity production it was brought down in the neighborhood of \$4000. All the costly experimental work was done on the first boat; after that it was simply a question of manufacturing.

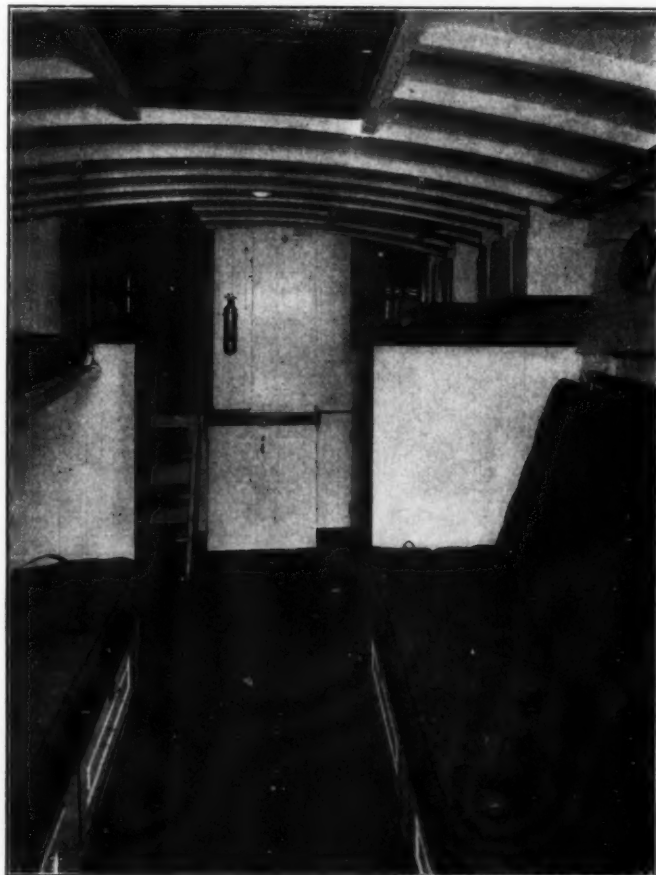
You save a lot of worry when you buy an International-32. It comes completely equipped and ready for use. Every dimension and every detail has been worked out and refined to perfection, not merely by architects' formulas but by repeated experience and development of this one design.

You find plenty of headroom, plenty of locker space, comfortable berths, lots of room in the cabin, complete gallery equipment, good plumbing and a big awninged cockpit, 11 feet long with a wide cushioned seat across the stern. The engine is the latest Kermath 35 which gives ample power and 12 miles speed; it has self-starter and all equipment and is the ideal engine for this outfit because it has more than enough power to handle the boat easily under all conditions.

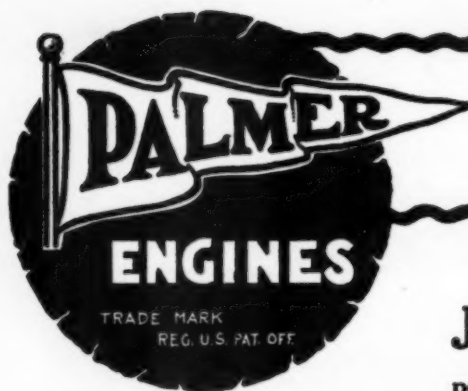
This boat sleeps four below decks and is big enough to take that size party out on a week's or a month's cruise without crowding. For day trips there's room for a dozen or more, but as a good cruiser is really a floating hotel or apartment, it should be measured by the capacity of its comfortable living accommodations. That is why 32 feet is about the minimum practical size for a complete cruiser. It permits building a raised deck type with sufficient headroom inside; and the raised deck type makes unquestionably the best looking boat, the most up to date, and the roomiest inside.

If you are a real boat critic, you have a treat and several surprises in store for you when you inspect the International-32 and study its details. Not the least of these is the fact that the price is only \$4350, complete and ready to run, with the Kermath 35 engine. With a Kermath 20, good for 10 miles an hour, the price is \$3950. A single boat of this design could not be profitably built within \$1000 of the price.

The International Shipbuilding and Marine Engineering Corporation is at Nyack, N. Y., right across the Hudson from Tarrytown. At your first opportunity you ought to run up to their yard and look over the International-32. Spring deliveries are now being booked.



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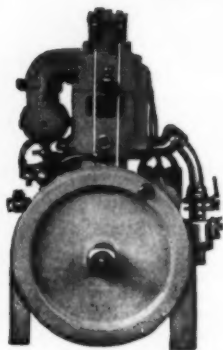
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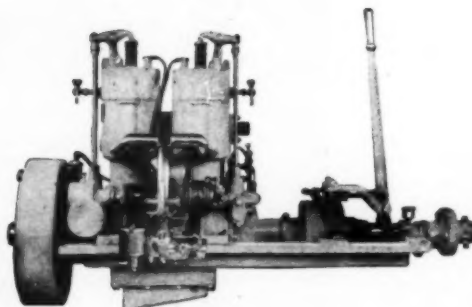
So here it is—the YT-2. It was publicly exhibited for the first time at the Annual Motor Boat Show, where it made a great hit with the hundreds of boat builders, engine dealers and boat owners who inspected it. The new YT-2 weighs only 200 pounds, or 260 pounds complete with reverse gear. It is a valve-in-head engine and develops four to five horsepower.

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In spite of its small size this is a high-grade engine and a typical Palmer from top to base. It has individual cylinders with detachable heads. The intake gases are heated by manifold being cast integral with cylinders. The oiling system is combination force feed and splash. A counter balanced crank shaft practically eliminates vibration. All bearings



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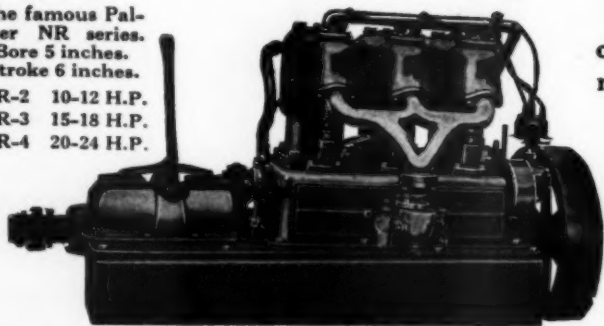
Ignition, high tension magneto equipped with impulse coupling, which insures easy starting. Exhaust manifold water-jacketed. For boats that do not have fore and aft space, this motor can be purchased without reverse clutch. Weight about 200 pounds without gear, 260 with reverse gear.

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## How to Clean and Overhaul An Engine

(Continued from page 88)

### Ignition

Ignition troubles are the most numerous ills the gasoline motor has, and the seasonal overhauling would not be complete unless this part of the equipment was gone over thoroughly. Renew all wires which are defective, particularly the high tension wiring; clean and resurface all contacts, even in the switches; clean and adjust all spark plugs, renewing any defective ones, and setting the firing points to the required gap, generally about the thickness of a worn dime; clean and adjust timers or distributors according to the manufacturer's instructions, dressing contact points, and renew any worn or defective parts; with generators, magnetos or starters, only adjust breakers, smooth up commutator, renew or adjust brushes, etc.; any other repairs or adjustments should be made by the factory or shop equipped and capable of doing a good job; storage batteries should be sent to be charged, and left there until needed in the spring; dry cells can be thrown away, or used for some other purpose, and a new set purchased in the spring; check up the ignition timing and see that you have it set correctly. An approximate setting for medium speed engines, would be to set number one cylinder with the piston at the top of the firing stroke, set the advance lever at the center of its travel, and turn timing shaft until timer or distributor makes contact with high tension lead to that cylinder, tighten set screws, and you will be within one tooth of the correct timing. After the motor has been run see that you have the correct advance, and if not, shift timing shaft one tooth of timing gears at a time, until the correct timing is obtained.

### Reverse Gear

In general, about all that's necessary to be done to the reverse gear, unless it has had a lot of mistreatment, is to clean thoroughly, adjust shaft bearings, adjust or renew thrust bearings or collars, adjust fingers for ahead and reverse motions, and renew lubricant. In some cases it may be found necessary to renew worn or defective parts, and, in cases of this sort, it would be advisable to have it done at the factory

or in some shop. If you can do it yourself, it is possible to buy or have made the replacements, and by using care in fitting and assembling, a good job can be anticipated. In some of the internal expanding band type of gear, the band becomes worn to the extent where it will slip even after the fingers have been adjusted to the limit; and in the sketch is shown a very good method of repairing this fault. In assembling, it is best to renew all felt gaskets or washers, and check up the alignment with both the propeller shaft and engine.

### General

As a general rule, it is best for the boat owner to keep a record of the motor's cost of operation for each trip, comparing the mileage cost occasionally, to see that the motor's efficiency is up to normal. When it is found that the efficiency is dropping, a general cleaning up, renewal of lubricant, grinding of valves, carburetor adjustment, battery recharged, etc., will generally bring the efficiency back to normal; and in the long run, this little attention will make towards prolonged motor life, and lower mileage costs. On long runs, or even on the ordinary cruises, where your time is not limited, running the motor at about 80 to 90 per cent of its maximum revolutions, will reduce repair costs and increase motor life. Keep the motor clean outside as well as inside, wiping off while the motor is still warm, after run. To keep the motor clean inside, use clean oil, make sure the motor is getting a good supply of clean gasoline, protect the motor as much as possible from dirt or dust, and install an air strainer on the intake of the carburetor. An air strainer is simply a large cone of copper gauze fitted tightly over the air intake of the carburetor, and if the gauze is of fine mesh, it will keep out practically all dust. Controlling the operating temperature of the motor, by by-passing some of the hot overflow water back through a manually operated valve to the water pump, will increase power and efficiency. Of course, all this may be a little trouble to carry out, but there is nothing worth while in this world that is not the result of some effort on someone's part; and, as this applies to boating as well as other things, you can only expect to get out of it exactly what you put into it.

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 Chart No. 31—Potomac River, Entrance to Lower Cedar Point  
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 Chart No. 35—Virginia Coast, Cape Henry to Albemarle Sound  
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## The Compass and Its Error

(Continued from page 31)

magnetism when exactly in the line of force but it receives some magnetism in any position except right angles and the strength of this magnetism is proportionate to the cosine of the angle it makes with the line of force. When this angle becomes 90 degrees there is no force. This explains the gradual loss of magnetism, or gain as the case may be, as the ship swings in azimuth, of the horizontal irons, and also explains why deviation is different on different headings while variation remains the same.

It can now be seen why it is best to have the compass placed on the fore and aft line of the vessel, as nearly all of the iron in the ship is symmetrically placed and thus the influence of the different irons on each side, or fore or aft of the compass tend to neutralize each other if the compass is centrally located.

Now we must consider the action of hard iron on the compass. Hard iron does not easily become magnetized by induction but when once magnetized retains its magnetism indefinitely no matter what change of position may take place. Soft iron may be transformed into hard iron by hammering and its polarity will be determined by the direction in which it was placed when hammered. If held in a general north and south direction its northern end will have positive polarity and its southern end negative. It is the same with a ship itself. A metal ship built with its head to the north will become a permanent magnet with a positive pole in the bow and a negative pole in the stern. If built heading west it will have a positive pole on the starboard side and a negative pole on the port. The magnetism of a ship is usually referred to as sub-permanent as it is subject to gradual diminution by time or change of conditions.

The effect produced upon the compass needle at any time will be the combined effect of all the forces then acting, whether permanent or transient and from the laws of magnetism we know that like polarity repels and unlike attracts, and also that the greatest effect is produced when the line connecting the poles of a magnet is at right angles to the magnetic meridian and therefore to the compass needle.

Bearing these facts in mind, if we then take the case of a metal ship built with its head to the north, we will find that when it is on a north or south course with its compass in the fore and aft line there will be no deviation produced by the sub-permanent magnetism of the ship itself because the forces are acting in the same line, but the minute we begin to swing to the west the north point of the compass needle will be deflected to the east by the positive polarity of the ship's head, which will reach a maximum easterly deviation when the ship is headed due west. As the ship continues to swing to the south the easterly deviation will become less and less until it is zero again on a south course. As it continues to swing in azimuth the deviation will begin to increase again but now it will be westerly until the maximum is reached when the heading is due east. The effects of the sub-permanent magnetism are constant in all latitudes and this is known as semi-circular deviation from the fact as seen above that its maximum effect is attained in two semi-circles.

The effect of sub-permanent magnetism of the ship on the compass is, however, modified by the induced magnetism set up in the vertical irons. We have seen that the lower ends of all vertical or inclined irons in the northern hemisphere have positive polarity and repulse the north end of the compass needle while their upper ends have negative polarity and attract it. This is of course reversed in the southern hemisphere. But this induced magnetism comes only from the vertical component of the earth's magnetism and as this varies from zero at the equator to full strength at the poles it is of course different for all latitudes, but as it affects the compass needle in the same way as sub-permanent magnetism, namely reaching its maximum effect in any latitude in semi-circles, it forms part of the semi-circular deviation.

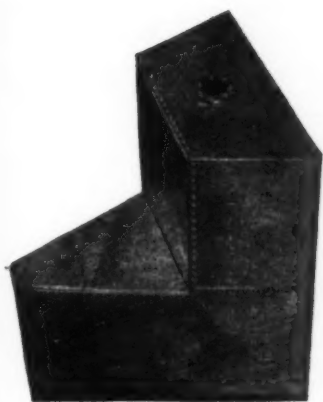
There is still a further error due to rough weather known as the heeling error. This is occasioned by the fact that as the ship rolls the induced magnetism changes owing to the vertical irons tending to become horizontal and the horizontal irons vertical and they, therefore, take on or lose magnetism contrary to what they would have in their normal position.

All these errors may, however, be compensated for, even that which varies with the latitude so that the residual errors need not be very great in the average ship. But sight must not be lost of the fact that the permanent or sub-permanent magnetic conditions of the ship are subject to change from various causes. That will be especially true if extensive repairs are made with the vessel on a different heading from that in which she was built, and this may even result in a complete reversal of polarity. Long or frequent voyages on a heading different from the one while building may also modify the polarity.

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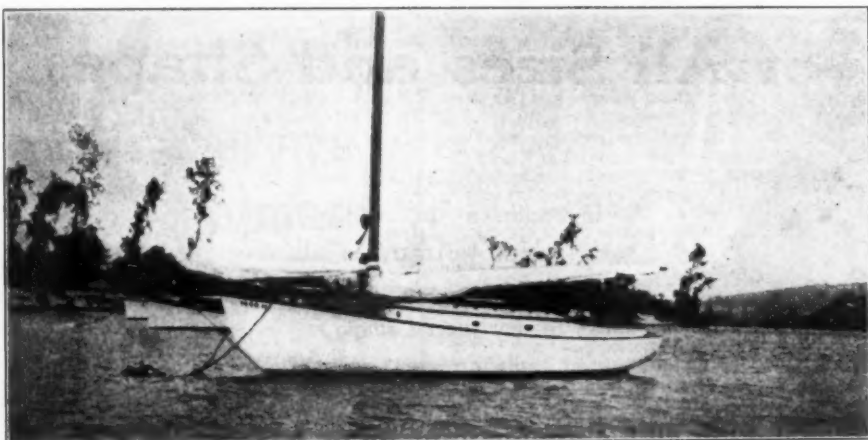
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### Some Combination!

Designed by Alden

Built by Lawley

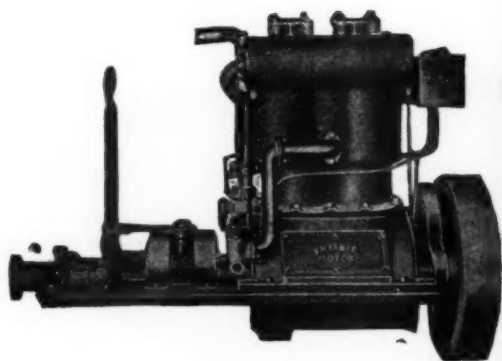
and

**POWERED by FRISBIE**

THIS 30 ft. x 9 ft. 9 in. x 3 ft. auxiliary sailed from Boston, Mass. to Middletown, Conn. on her maiden trip. On the final stretch her 10 H.P. Frisbie Motor was started at daylight in Newport and shut off in Middletown after dark.

Any Frisbie Motor will give the same kind of all-day service.

*Catalog and particulars for the asking*

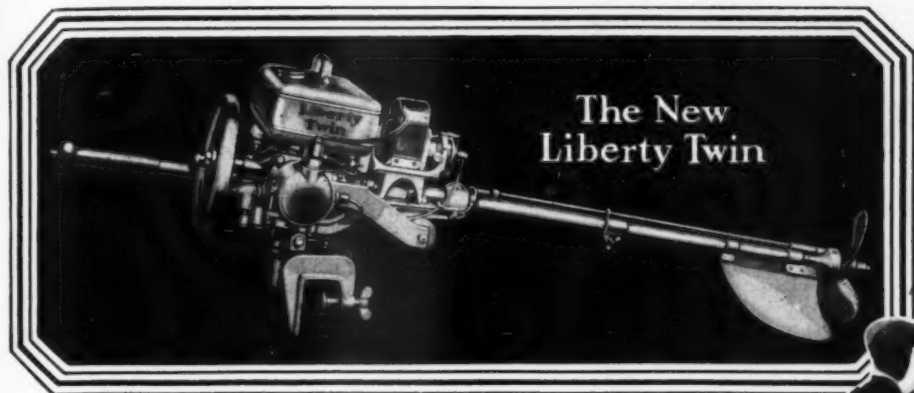


**The Frisbie Motor Co., 7 College St., Middletown, Conn.**

*Manufacturers for over 20 years of overhead valve gasoline and kerosene engines for the propulsion of boats.*



*Advertising Index will be found on page 159*



## The New Liberty Twin

Twin Cylinders  
Light Weight  
Direct Drive  
Bosch Magneto  
Zenith Carburetor  
Motorcycle Control

## No Other Rowboat Motor Combines all these Features!

Bosch Magneto—Zenith Carburetor—twin cylinders—no vibration—light weight—direct drive—lots of speed—easiest motor to carry ever built! A motor that no other dare or *can* follow—that drives your boat where'er 'twill float—that neither weeds, shallows nor hidden obstructions can stop or damage—the *only* motor that gives you 100% use of your boat! No other compares with the wonderful new



The direct drive, in itself, is an achievement that stands alone in outboard motor designing. Tested by thousands of users over a period of four years, it has proven its superiority over all vertical and so-called "tilting" motors. Four years ago we challenged other builders to follow us through weeds, shallows and over sunken obstructions. That challenge has never been accepted and still stands.

### Bosch Magneto

The world's standard ignition system. Magneto is mounted on a rocking cradle, specially designed by Caille and Bosch engineers, and gives a uniform hot spark at any speed. The best ignition system money can buy. Backed by 2,100 Bosch Stations for quick service if needed.

### Dealers! This Motor Sells

Its many advantages are so apparent you don't have to argue a prospect into buying a Caille Liberty Twin. Every desirable feature that may have appealed to him in other motors is incorporated in this master motor. And you'll not have to service it, either. If the customer should ever experience ignition trouble just refer him to the local Bosch service station. If carburetor trouble should ever develop, the local Zenith service station will remedy it. You make a liberal profit on every motor. That profit stays in your cash drawer. You don't have to discount it to cover free service charges.

### Handle the Entire Caille Line

Provides a motor to meet every purse and every fancy as regards types. But you'll find the Caille Liberty Twin will be your leader by a wide margin. Good territory is going fast. Hundreds of dealers are giving up franchises on other motors to handle the Caille. Don't delay. Send for discounts and your territory right now. Use the coupon.

### THE CAILLE PERFECTION MOTOR CO.

6214 2nd Boulevard

Detroit, Michigan

# CAILLE

PRONOUNCED "CAIL"

## Rowboat Motors



**The Single-Cylinder Liberty**  
The Motor That Proved the  
Direct-Drive Principle **\$85.00**  
complete with battery ignition. Same principle as the Liberty Twin but of single cylinder design and very moderately priced.

### Use This Coupon!

**The Caille Perfection Motor Co.**  
6214 2nd Boulevard, Detroit, Mich.

Gentlemen: Please send me complete details on your Caille Liberty Twin motor and dealer discounts.

Firm Name.....

Address.....

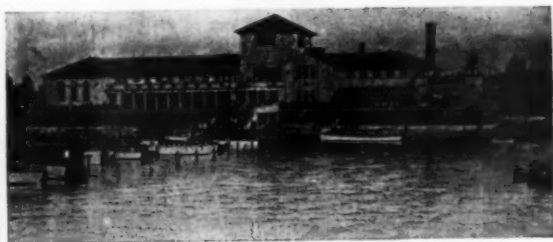
Town..... State.....

Have you previously sold outboard motors?.....

How many per season?.....

What territory desired?.....

## The Main Sheet Covers Detroit



**T**HE entire field of boating in Detroit and its environs is covered by the official publication of the world's largest Yacht Club. Every month this magazine reaches an influential group of boat owners and automobile manufacturers.

The Main Sheet with its large exclusive circulation will prove resultful as an advertising medium for your products.

*Rates on Application*

THE  
**MAIN SHEET**

**W. D. Edenburn, Editor  
HOTEL ADDISON  
DETROIT**

### Baby Doll A 26 Foot Speedster

(Continued from page 32)

and fastened to the stem knee with three  $\frac{3}{8}$ -inch fastenings. It is to be properly beveled and bearded to suit the planking and fastened with four  $\frac{3}{8}$ -inch bolts to the keel, after which the rabbeting can be completed.

**Stern:**—The transom is to be of the curved type with an upper and lower member sawn to a proper radius of 3-inch white oak or ash and to finish 1 inch. It is to be halved into a  $1\frac{1}{4}$  by 4 inch stern post, while the side members are to be of 1-inch walnut, halved into upper and lower members. There will be two  $\frac{3}{4}$  by 2-inch oak cleats on each side. The transom is to be mounted on the keel with a 1-inch hackmatack knee on each side, secured on the keel and post. All fastenings to be screws of suitable size. The outer covering to be  $\frac{9}{16}$ -inch mahogany in one piece. If necessary to use two pieces insert a  $\frac{1}{2}$  by  $1\frac{1}{4}$ -inch batten to take the seam. Transom is to be screw fastened and the holes wood plugged, and all to be properly trimmed and beveled in readiness for the planking.

**Frames:**—Frames at stations are to be of  $\frac{3}{8}$ -inch white oak or ash with a bottom and side member, halved at the chine. They are to be approximately 3 inches on the bottom and 3 inches at the heel, tapering to  $2\frac{1}{4}$  inches on the top at the sides. They are to be fastened with eight No. 8 copper rivets, leaving the center clear to rivet to the chines. They are to be joined with an oak floor of such dimensions as shown on the drawings, and with at least six No. 8 copper rivets on each side. When completed they are to be through bolted to the keel with one  $\frac{7}{16}$ -inch bolt up to and including Station No. 4, and two  $\frac{5}{16}$ -inch bolts through to the rabbet to the stern. The bottom member beginning with Station No. 7 may be in one piece and  $1\frac{1}{2}$ -inches in thickness. It may be cut down to  $\frac{7}{8}$ -inches from a point 3 inches outside of the stringer to the chine. There will be an intermediate frame as indicated with a  $1\frac{1}{2}$ -inch oak floor extending at least 8 inches outside of the stringers, and feathering into plank battens. All space between the battens is to be filled out with pine or spruce and at the chine to about a 5-inch radius. There will also be a  $\frac{7}{16}$  by  $1\frac{1}{2}$ -inch bent frame from the stringer to the sheer, which is to be through fastened with the planking.

**Chines:**—These are to be of 2 by 2-inch white oak or yellow pine in a single length of straight grain, clear stock. They can be slightly tapered toward the stem and are to be properly rabbeted to suit the planking. They are to be rivet fastened to the frames with  $\frac{3}{4}$ -inch copper stock and screw fastened to the stem and stern. They are to be reinforced at the stem with a 2-inch oak breast hook and a knee to the transom on each side at the stern.

**Engine Stringers & Bed:**—Engine stringers are to be shaped from  $1\frac{1}{4}$ -inch aero spruce and so spaced as to suit the mooring. They are to be notched in over the frames and intermediates and through bolted to the same with  $\frac{3}{8}$ -inch bolts. Their top is to form the floor line. The bottom is to rest on the bent frames. The engine bed is to be of white ash, bolted to the stringer and drift fastened to the floors. It is to be aligned to suit the motor to be installed.

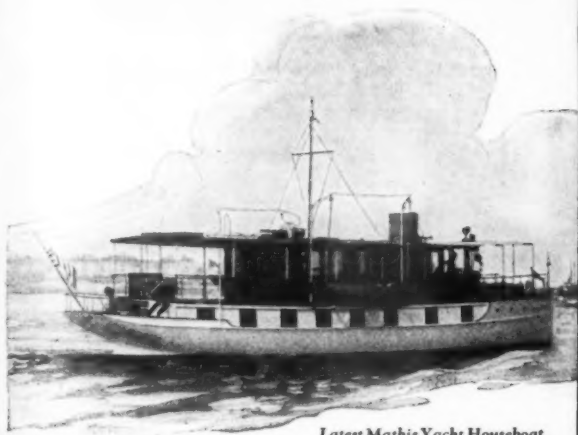
**Strut Block:**—There will be a  $1\frac{1}{2}$  by about 8-inch plank to extend from the chine to fasten the strut to. It should be slightly notched in over the keel and fitted to the chines. It is to be hollowed out to about 1-inch outside the keel and tapered to 6-inches at the chines. It should be through fastened with the strut on the keel and screw fastened to the chines.

**Plank Battens & Clamp:**—The plank battens on the side are to be of  $\frac{3}{4}$  by  $1\frac{3}{8}$ -inch white oak or yellow pine. They are to be spiled approximately as per plan and notched into the frames and securely screw fastened. The bottom battens are to be  $\frac{1}{2}$  by  $1\frac{3}{4}$ -inch white oak or yellow pine. They are to be spiled so that the two outside battens will end in the chine. They are to be secured in a similar manner to those on the sides. The clamp is to be of  $\frac{9}{16}$  by  $2\frac{1}{2}$ -inch oak or yellow pine let into the frames and securely screw fastened. There will be a 2-inch breast hook forward and a substantial knee on each side to the transom.

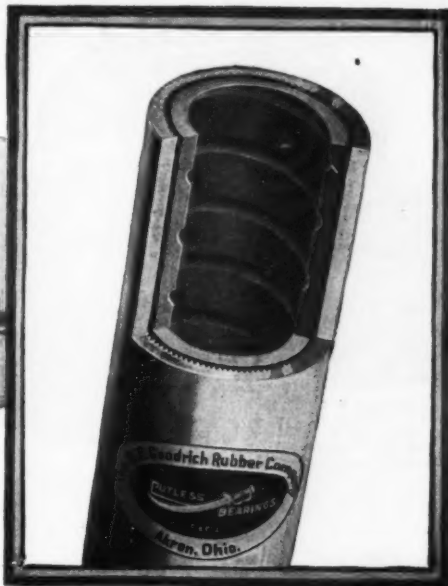
**Deck Beams & Framing:**—Beams on station and intermediate points are to be  $\frac{7}{8}$  by  $1\frac{3}{4}$ -inches while those in between can be  $\frac{5}{8}$  by  $1\frac{3}{4}$ -inches. The beams on stations and intermediates are to be supported with a knee as per plan and to be bound with a  $\frac{3}{4}$ -inch oak frame, screw fastened on all frames except bulkheads. The forward cockpit and the hatch trimmer to be  $\frac{3}{4}$  by  $2\frac{1}{2}$ -inches. Beams on Station No. 3 as well as those forward and aft of motor compartment, to be  $\frac{7}{8}$  by  $2\frac{1}{4}$ -inches. Headers for hatch

(Continued on page 108)





Latest Mathis Yacht Houseboat  
"BILMA III," owned by Mr.  
W. G. Selby of Sarasota, Fla.,  
and built by Mathis Yacht Building  
Company, Camden, N. J.



## "A BETTER BEARING"—they are all saying it

The remarkable performance of Goodrich Cutless Bearings has set the whole marine world talking.

The unusual life of this bearing, far longer than the wood, metal, or babbitted types, is not its only advantage.

It uses water as a lubricant. Its tough Olivite Rubber surface when wet has far less resistance than an oiled surface; sand and grit cannot become imbedded, bearing wear is eliminated, vibration is lessened, shaft scoring is a thing of the past.

"The quietest boat we ever launched" says the Mathis Yacht Building Company of the Cutless Bearing-equipped Bilma III, shown above.

Write for details—we have a convincing array of wonderful bearing performances, under sandiest, dirtiest water conditions.

No size limitation  
to Cutless Bearings  
—supplied for any  
size craft.

NOTE—It is easy to replace with Cutless Bearings. Slide out one bearing and slip in another. Bearing comes complete with brass shell to slide into housing, held by set-screw or collar key, or any other mechanical means used for fastening sleeve bearings.

THE B. F. GOODRICH RUBBER COMPANY, Akron, Ohio  
ESTABLISHED 1870

# Goodrich Cutless Bearings

"BEST IN THE LONG RUN"

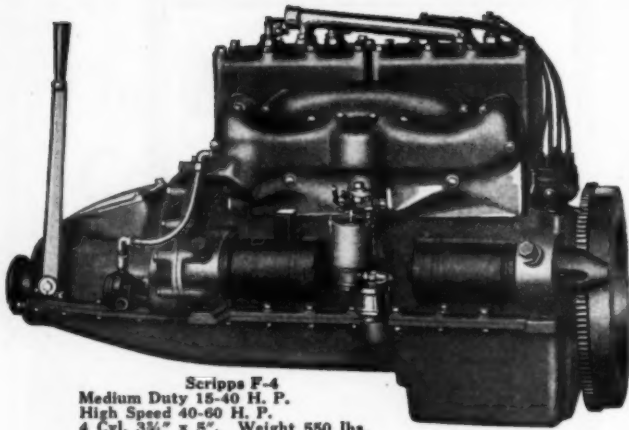
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**Scripps F-4**  
 Medium Duty 15-40 H. P.  
 High Speed 40-60 H. P.  
 4 Cyl. 3 1/4" x 5". Weight 550 lbs.  
 Complete including starter, \$750

The Burger bridge deck cruiser, 36' x 9'. Speed 11 miles per hour. Scripps E-4. Built by Burger Boat Co., Manitowoc, Wis.



A standardized 32' schooner of extra heavy construction, built by Casey Boat Building Co., New Bedford Mass. and powered with the F-4.

# Scripps

The  
 Lowest  
 Priced  
 High Grade  
 Marine Engine

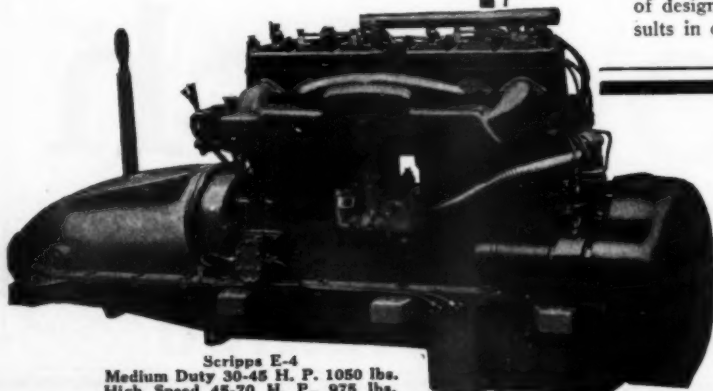
When you come to size up the marine engine market, be sure to get this fact firmly fixed in mind. The Scripps is strictly a high grade engine. And furthermore, it is the lowest priced high grade engine on the market.



This standardized 28-ft. runabout is built by Greenport Basin and Construction, Company, Greenport, New York. Scripps E-4. 20 miles per hour.

After you have studied Scripps construction, and investigated the Scripps reputation among experienced boat owners, builders and dealers, you'll find yourself comparing the Scripps with engines costing 50% to 100% more. We welcome the comparison. But in fairness to yourself, don't forget that you don't pay any exorbitant premium for Scripps quality.

We build marine engines exclusively. We have been building them for years, constantly studying the service reports from Scripps users and constantly striving to improve and refine our engines without the radical changes of design that are so costly to the buyer. This policy results in quality and economy.

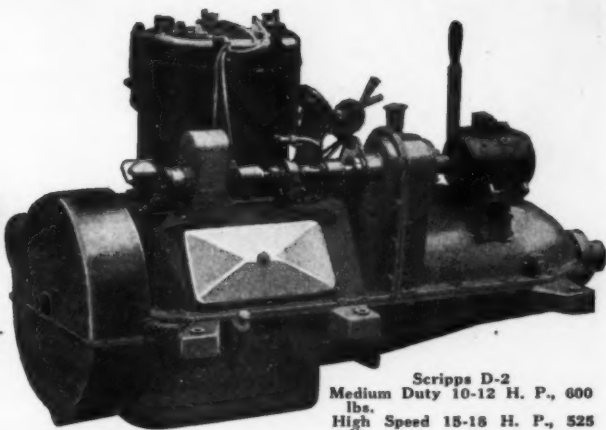


**Scripps E-4**  
 Medium Duty 30-45 H. P. 1050 lbs.  
 High Speed 45-70 H. P., 975 lbs.  
 4 Cyl. 4 1/4" x 6"  
 Complete, including starter, \$1250

The new Great Lakes "Special" 26 ft. runabout. Speed 23 1/2 miles per hour with the Scripps F-4. Built by Great Lakes Boat Bldg. Co., Milwaukee.



Hacker "Dolphin," 23' x 6', Scripps E-4, standard power equipment, 25.6 miles per hour. Built by Hacker Boat Co., Detroit.



Scripps D-2  
Medium Duty 10-12 H. P., 600 lbs.  
High Speed 15-18 H. P., 525 lbs.  
2 Cyl. 4 1/4" x 6"  
Complete including starter, \$650.

We are proud of the class of standardized boats which are equipped with Scripps engines. These include several of the most attractive and most successful stock types now offered.

Boat builders realize that an engine of high reputation and thorough dependability is the best possible selling feature for a well built stock boat.

Whether you are having a boat built to order, choosing a standardized model, or repowering your present hull, you'll find in the Scripps engine that happy combination of quality and economy which insures maximum reliability and satisfaction with lowest first cost and maintenance expense.

Let us help you investigate this engine question. We have quoted the prices on these pages, but that is only a small part of the story.

Write for catalog and name of nearest dealer.

## SCRIPPS MOTOR CO.

5819 Lincoln Avenue, Detroit, Mich.

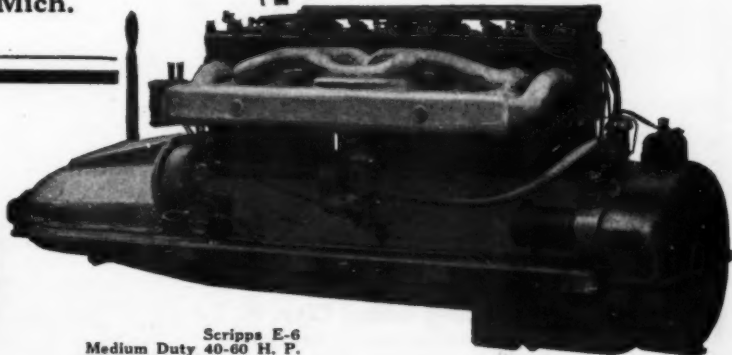
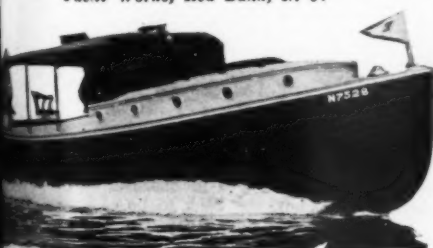


Belle Isle "Baby Bearcat," 24' x 6', Scripps F-4, standard power equipment. Over 25 miles per hour. Built by Belle Isle Boat & Engine Co., Detroit.



65 ft. standardized semi-houseboat cruising yacht. Over 14 miles per hour with a pair of Scripps E-6. Built by Matthews Co., Port Clinton, Ohio.

Standardized 35 ft. Red Bank cruiser. 18 miles per hour with Scripps E-6. Built by Red Bank Yacht Works, Red Bank, N. J.



Scripps E-6  
Medium Duty 40-60 H. P.  
1400 lbs.  
High Speed 65-100 H. P., 1290 lbs.  
6 Cyl. 4 1/2" x 6"  
Complete, including starter, \$1750

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STEARN'S-McKAY  
**MARBLEHEAD**  
**ANTI-FOULING**  
**GREEN**  
**BOTTOM PAINT**



FOR STEEL OR WOOD      FOR MANY YEARS USED AND HIGHLY RECOMMENDED BY GEORGE LAWLEY & SON CORPORATION      STAYS CLEAN

Practically all their new boats the past year were painted with Marblehead Anti-Fouling Green, including the INTERNATIONAL 8 METER RACERS ALEXANDER GRAHAM BELL used Marblehead Green for years in his Experimental Boat Department, where amazing speed results were obtained.

FOR CRUISING AND RACING YACHTS AND VESSELS The Most Powerful Preventive of Marine Growth and Destructive Borers. A Hard Slippery Finish. Lasts a long time and is INVALUABLE FOR RACING. The Cruising Yachtsman saves his first cost many times over in expensive repairs and repainting work.

It Has No Equal For Tropical Waters As A Protection Against Turtles ALL FIRST CLASS DEALERS AND YACHT YARDS STEARN'S-McKAY MFG. CO., Marblehead, Mass., U. S. A.



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Don't wait until your Dealer may be out of some one of our Varnishes, Enamels or Paints you may want. Order now so that he can get what you want in plenty of time. If Your Dealer does not handle our Products write us for Prices, Catalogues and the Name of a Dealer who does.

#### "CUP DEFENDER VARNISHES"

AQUATITE, The Hard Fossil Gum Spar; I. X. L. FLOOR FINISH for Protected Decks; SMITH'S YACHT WHITE; MARINE WHITE ENAMEL; SMITH'S YACHT DECK BUFF; YACHT BLACK GLOSS; SMITH'S FRICTIONLESS RACING BOTTOM FINISH;

#### ESCOLAC (The Salt Water Proof Lacquer)

"TURN POLISHING DAYS INTO HOLIDAYS" Prevents Tarnish and Rust on Metals

On account of the instant large demand for ESCOLAC we have been unable to get it in the hands of all our dealers. Send us 50 cents and we will mail you ¼ pint at once.

#### EDWARD SMITH & CO.

129 West Ave., Long Island City, N. Y.  
The First Varnish Factory in America

## Baby Doll, A 26 Foot Speedster

(Continued from page 104)

to be ¾ by 2¼-inches, and trimmer in the after cockpit to be ¾ by 2½-inches. All to be of perfectly clear white wood with fillers inserted where indicated.

**Frame in General:**—The entire frame is to be properly trimmed, bevelled, and faired in readiness for the planking. All joints as the work progresses, should be painted with pure lead paint. Frames and stringer joints should also be painted as the planking is applied. All fastenings are to be of bronze, copper, and galvanized iron. Where galvanized fastenings are exposed, holes are to be counterbored, bolts to be painted with red lead, and the holes wood plugged. The bolts through the stringers are to be galvanized.

**Planking:**—The sides of hull are to be planked with 7/16-inch mahogany, if finished natural, or ½-inch cedar, or the equivalent. It should be in as long lengths as practical and spiled beneath the center of battens. It should be screw fastened to the stem, stern, and frames with 1¼-inch No. 9 screws and rivet fastened with 2-inch copper wire nails over burrs to the intermediates and battens, using a ½-inch through the battens. All butts are to be made of oak butt blocks and to have at least eight fastenings on each side. Butt blocks are to be not less than 8-inches in length. The side planking is to have flush seams and be blind caulked making a groove in each plank on the center inserting a strand of soft Seine twine, except chine seams, which will be caulked in the regular fashion. The bottom planking is to consist of an inner plank of ¾-inch and a fore and aft plank of 7/16-inch. Lay the inner plank diagonally and fasten temporarily. Now lay the 36-inch AA canvas drill and apply marine glue as the planking progresses, the Aero Marine Laboratories, North Tonawanda, N. Y., product recommended. Next make a complete fastening in the same manner as on the sides. Screw fasten where riveting is not practical on intermediate frames. Also screw fasten into the chine and keel. All fastenings on the bottom and sides to have a hole counterbored with a Forstner plug bit and holes plugged with ¾-inch plugs. Allow a uniform seam on the bottom about 3/32-inches and caulk lightly. Also caulk chine seams on the sides with spun cotton which should be rolled in and not hammered.

**Decking:**—Decking is to be of 7/16-inch mahogany, except the center plank which shall be ½-inch and slightly let into the beams. The covering board is to meet on the center of the partner. The balance of the decking is to be 7/16 by 2½-inch strips with two fastening to each beam. Screw fasten the covering board and center plank, as well as the ends of strips to partner. The balance to be fastened with 1½-inch galvanized nails. All fastenings to be allowed plugged. A uniform seam of 3/32-inches is to be allowed for composition. All seams are to be lightly caulked with spun cotton.

**Bulkheads:**—There will be a ¾-inch ply wood bulkhead on Station No. 3 and also one just forward of the motor. It is to have backing in alignment with the stringer and laid on the frame with cotton flannelette in marine glue, and screw fastened. The forward bulkhead is to have an 18 by 20-inch opening for access, with framing and a door, which should be screw fastened over a gasket for a watertight fit. Other bulkheads to be as specified.

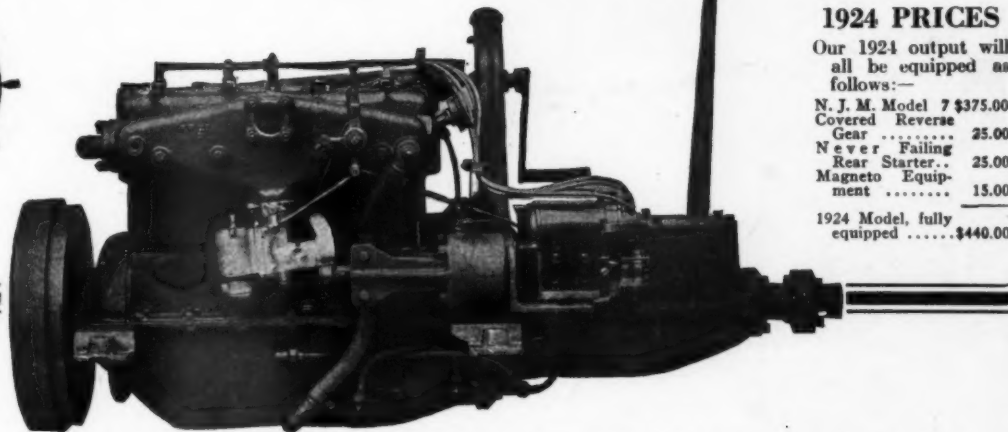
**Fenders:**—There will be a shaped fender of the V-type, with a ¾-inch margin and bound with brass. It should be shaped from ¾ by 1¼-inch stock and tapered slightly at the ends. Instead of the shaped fender a 1¼-inch half round moulding may be used which should be screw fastened and the holes wood plugged. There will be another fender immediately above the waterline, extending forward to where it intersects the top fender. This should be shaped from ¾ by 1-inch stock with a ½-inch margin, and protected with a ½-inch half oval brass moulding, securely screw fastened.

**Hatch Covers:**—Framing to be ¾ by 1½-inches and beams ¾ by 1½-inches, all of white wood. They are to be covered in the same manner as the decking or with Haskellite. They should be screw fastened and wood plugged if regular or flush screw fastened with the Haskellite. They are to be mounted with 1¼-inch piano hinges and bound with 1¼-inch 18 gauge brass, all screw fastened. They are to be fitted with suitable quadrants, and lifting handles of bronze. Secure a resting strip of ½ by ½-inch oak on each header for the hatch to rest on.

**Cockpits:**—The forward cockpit is to have 9/16-inch coamings, the forward break to be 5/8-inches, the instrument board and bulkhead 9/16-inches, the back to be ¾-inches, the

(Continued on page 112)

# Buy This Motor On Our Easy Payment Plan



## 1924 PRICES

Our 1924 output will all be equipped as follows:—

N. J. M. Model 7	\$375.00
Covered Reverse Gear	25.00
Never Failing Rear Starter	25.00
Magneto Equipment	15.00

1924 Model, fully equipped .....\$440.00

**W**E have made it easy for every boat lover to have a good engine in his boat. By our Easy Payment Plan you can buy a brand new N. J. M. with a small down payment and pay the balance while you are using the engine.

Furthermore we have proved that the N. J. M. is so economical in fuel consumption that the saving in gas compared with most other marine engines of the same power will actually pay for the N. J. M. in part of one season. Perhaps your old engine would run another year, but why put up with all the bother and expense when you can save money by getting a new N. J. M. right away.

The price of the N. J. M. is \$440 *completely equipped*. Last year we listed the engine only at \$375 but we found that 90% of our customers required the complete engine equipment so the 1924 price includes Covered Reverse Gear, Never Failing Rear Hand Starter and Magneto as well as carburetor, water pump and everything else ready to run. Remember this when you compare the price with others.

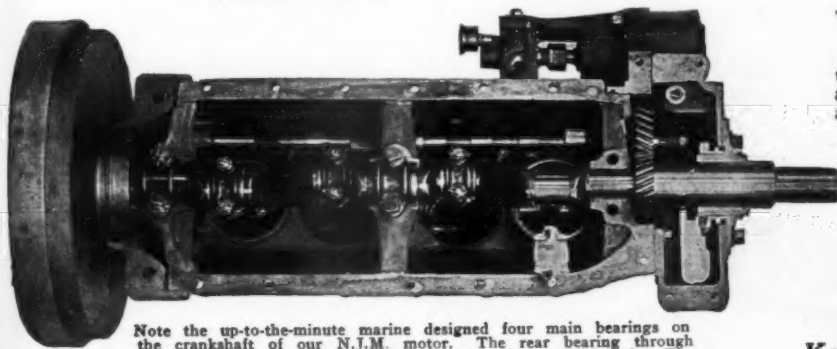
The N. J. M. is chock full of advanced and unique features which you will instantly recognize as characteristics of a superior marine engine. For example, the oil is circulated by a positive self-priming pump and is passed through a water-cooled oil cooler. A specially designed hot air intake takes any gas fumes that might get by the pistons and uses them again through the carburetor. The water pump can be removed without disturbing the ignition timing. The hand starter has no parts engaged when the motor is running. Get our catalog and read about these and other remarkable features.

**T**HE N. J. M. is a first class four-cylinder four-cycle engine of genuine marine type. We have made the essential parts interchangeable so that the N. J. M. owner can get new parts and expert repair service promptly and economically from any Ford Service Station.

When you study N. J. M. construction you will see many points of difference from automobile motor design—all typical marine practice. Extra large main bearings, positive lubrication, hot spot manifold, enclosed reverse gear and many other advanced features, several of which are exclusively N. J. M. designs.

## Prompt Deliveries—but Don't Delay

Nothing is more exasperating than to order a new engine and then have the delivery delayed. We know many buyers and dealers who have had this trouble—but not with the N. J. M. We have a real factory which has been in production on this motor for several years. We keep it running full time winter and summer and try to keep a stock for immediate shipment. But for your own protection, we advise you to place your order as early as possible.



Note the up-to-the-minute marine designed four main bearings on the crankshaft of our N.J.M. motor. The rear bearing through which the full power is transmitted is 2 1/4 inches in length. The shaft is two inches in diameter. This is marine construction—not automobile design.

Write today for details of our Easy Payment Plan

We'll be glad to send you the details together with our catalog, and answer any special questions you ask.

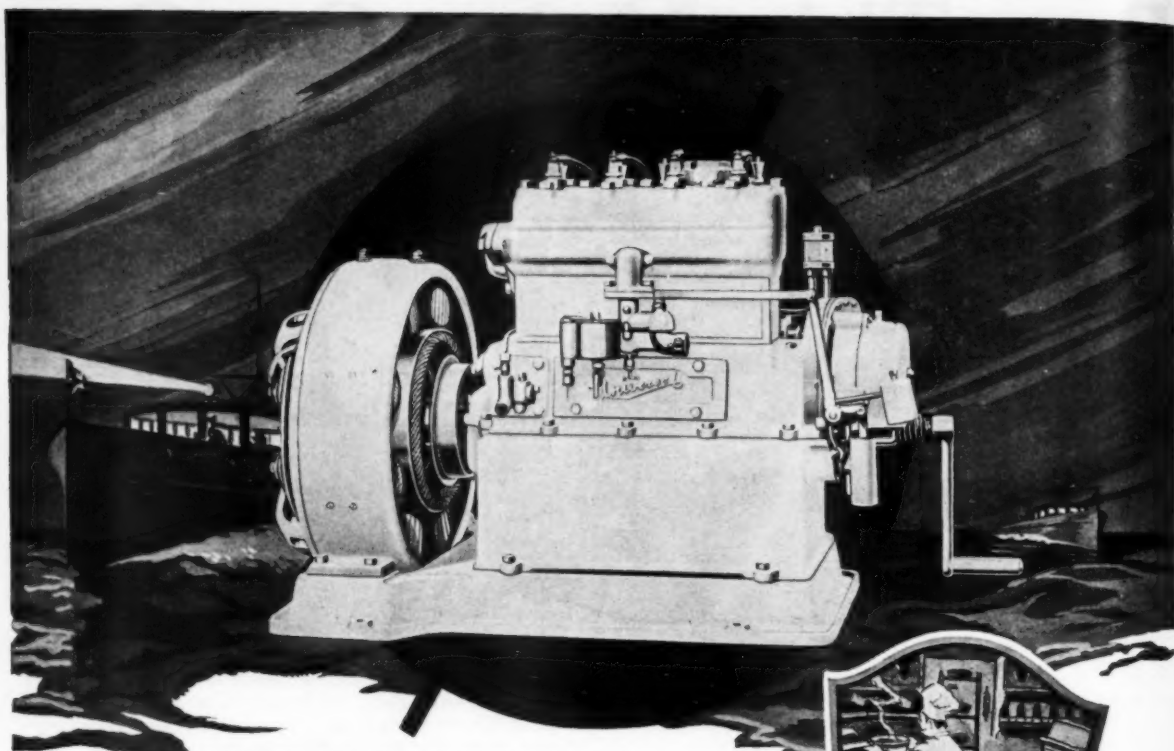
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If you haven't tied up with the N. J. M. franchise—get our proposition NOW.

**New Jersey Motors, Inc.,**  
Keyport, New Jersey, U.S.A.

Cable Address: "Nujermo" Keyport

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Above is shown the 4 K. W. Universal marine type unit — a favorite cruiser installation

## WHY SO MANY YACHTSMEN CHOOSE "UNIVERSAL" LIGHT

**B**ECAUSE Universal Electric Plants are smooth in operation—four cylinders give them a quietness which adds immeasurably to the comfort of stays in port.

They bring to the "Home Afloat" every electrical comfort and convenience of the home ashore—ample capacity to operate deck and signal lights, electric fans, curling iron, flatiron, toaster, grill or even a small electric stove. Charge your radio batteries, too.

They are compact and require surprising little space in the engine room.

They are simple, accessible and economical.

They produce a steady, even flow of flickerless current.

They are backed by a company which, for 24 years, has specialized in serving the marine field.

*Write for literature, giving size of cruiser you now own or are planning, together with work you want electricity to do for you.*

**UNIVERSAL MOTOR CO.,**  
40 Ceape St., Oshkosh, Wis.

Not connected with any other firm using the name "Universal."  
Makers also of the famous Universal 9-12 H.P. Marine Motor.

# Universal

Sizes:  
2 K. W. to 25 K. W.  
**ELECTRIC PLANTS**  
32, 60 or 110 volts, with or without batteries.

*Advertising Index will be found on page 150*



THE service they are rendering to others is their best recommendation to you. Recent installations include the "Wasp," Wm. Wrigley, Jr., Chicago; "Edris," Thomas H. Ince, Culver City, Cal.; "Cigarette," Gordon Hammersley, N. Y. City; "Gypsy," Hal E. Roach, Culver City, Cal.; "Windsor II," Mr. Megeath, Port Huron, Mich., and "Samona," W. J. Hole, Los Angeles.





*Go Get 'Em, a 33 ft. Sedan Runabout owned by Mr. F. W. Stevens, Toledo, Oregon. Built by Lake Union Dry Dock & Machine Works, Seattle, Wash. Speed over 25 miles per hour with Stearns Model M D R*

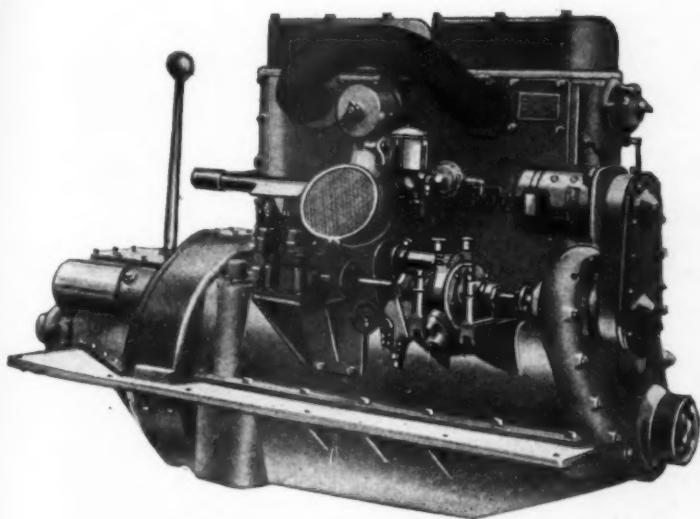
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EXTRA RESERVE  
MARINE ENGINE

THE Stearns Extra Reserve Marine Engine is a real "go-getter." It is built for punishment, built to stand by you in fair weather or foul, built to stick to its job until you say "stop." Whether your boat needs a 25 H. P. Medium Speed engine or any other size up to a 150 H. P. high speed type, the Stearns offers you a power plant of the utmost reliability and durability at the lowest practical cost.

All Stearns engines have the largest crankshafts and bearings ever used in engines of similar size. They have positive pressure lubrication to every moving surface—through drilled crankshaft to the bearings, through steel tubes to the wrist pins, to the overhead valve rocker shaft, etc.



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The principle of a True Screw is strictly followed out in the patterns from which all genuine Harthan Propellers are made. This type is known to be the most efficient.

Harthan wheels are made of a special bronze composition, very tough and strong. This allows a very thin blade, the edges of which are brought down very sharp, which, with the extra high polish, reduces the power-absorbing element to a minimum.

We can supply propellers with two or three blades, in practically any pitch, either right or left hand.

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ine Horn, 9  
in. high, 4  
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47 Whitehall St.—Phone Bowling Green 9197—New York, N.Y.

**BOAT SUPPLIES**

## Baby Doll A 26 Foot Speedster

(Continued from page 108)

seat front of ¾-inches, all of mahogany. The seat top and filler, as well as the flooring, to be 9/16-inch white pine. The seat is to be supported with a post and to be of the open type. The seat may extend through to the side and be filled in line with the coaming, forming a pocket on each side, in which an 8-inch round hole may be made through the bulkhead, giving access to same. Install a suitable backing on the bulkhead to make the steering gear secure.

**Aft Cockpit:**—This will have a 9/16-inch coaming shaped as per plans and screw fastened to beam and trimmer. The back to be ¾ inches, while the bulkhead will be in three sections with suitable backing in alignment with the stringers and with a 5/16-inch nosing in between to divide the panels. It is to be screw fastened to the backing with nickel plated oval head screws, with counter sunk washers. The after panel is to be 5/8-inches and with a filler and cleat in alignment with the coaming. The panel is to be fastened in place with suitable turn catches. The flooring is to be of white pine for the main portion and covered with 1/16-inch battle-ship linoleum bound with aluminum. The end pieces are to be of 5/8-inch mahogany, screw fastened. The seat will have a ¾-inch front and be supported by a post. The top will be of 9/16-inch pine, while the coaming, bulkhead, panel, back, etc., will all be of mahogany. All fastenings, except as otherwise specified, to be wood plugged.

**Finishing & Painting:**—The entire hull is to be thoroughly dressed and sanded, and the decking thoroughly cleaned. The bottom seams and the chine seam on the sides are to be lightly caulked with spun cotton, rolled in. The bottom up to the waterline, and the inside to the chine, are to have a coat of hot oil, composed of ¾ boiled linseed oil and ¼ turpentine, applied hot. After thirty-six hours, the bottom seam can be filled with a composition of dry red lead and Valspar mixed to the consistency of putty. The inside is to have one coat of heavy lead paint up to the chine. The sides, decking, and all natural finish to be filled with best mahogany paste filler, followed by two coats of Valspar, or equivalent. Deck seams are to be filled with Kuhls seam composition, white preferred. This should then be followed with another coat of Valspar throughout. When seams are filled with composition, depress slightly, using ¼-inch stock rounded off on the end. The bottom is to have one coat of lead paint and three coats of Valspar bronze bottom paint. The sides inside to have two coats of lead paint of a desired color from the chine to the deck, and three coats in the motor compartment. The flooring to have two coats of a desired color, or if finished natural to have three coats of Valspar. All varnish to be well sanded with No. 0 sand paper to a smooth surface. The final coat, if a high finish is desired, should be rubbed down with ¾ rotten stone, and ¼ pumice and water.

**Hardware & Fittings:**—The steerer to be of the Kainer or auto type with an 18-inch wheel connected to the rudder with ½-inch galvanized iron pipe. Use Universal joints with the Kainer, or drag links with the auto type.

The rudder will be of manganese bronze of the Hacker type and with a bronze stuffing box for Kainer gear. For the auto type use a hanger bracket and tiller.

The strut will be of manganese bronze, Hacker type, with bronze bolts.

The shaft log to be of the Erico or Hacker type, of bronze.

Gasoline tank to be of the Koven seamless steel type, 14-inches diameter and 33-inches in length with the necessary splash partitions.

The cutwater of the special brass type made to a pattern. Deck fittings are to consist of special bow fitting, one cabin type ventilator, one bitt post, or one combination bitt post and light. Two large clam ventilators or cowl type, and six side ventilators.

One 8-inch cleat on the after deck, four 6-inch cleats, two on each side, and two 5 and two 4½-inch chocks. The after flag pole socket may be combination pole and light. Deck plates fitted over the gas tank and all to be of polished bronze. If nickel finish is desired throughout, it should be separately specified. All fittings to be secured with suitable bronze screws and bolts.

The stern is to be brass bound with 3/32-inch brass, approximately 1½-inches in width. This is to be inlaid with one piece to take in the corner and extending 6-inches each way. There shall be another piece to the keel on each side and on the sides up to the shear line. These are to be securely screw fastened with brass screws. By this method,

(Continued on page 116)

**PLANTS**

Robins Dry Dock & Repair Co.  
Erle Basin, Brooklyn, N. Y.  
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**Y**ACHT owners recognize in the reliability of the Tebo Yacht Basin Plant of Todd Shipyards Corporation their best assurance that their vessels will be given the care they merit. Special facilities are offered for building, refitting, repair and storage.

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Plant of Tebo Yacht Basin Co.  
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## Why they "put it up to old man Joe"

Letters from leading engine builders who use Joes Gears as standard equipment



### Peerless Marine Motor Company

E. L. GRIMM President

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BUFFALO, N. Y.

March 28, 1923

The Snow & Petrelli Mfg. Co.,  
New Haven, Conn.

Gentlemen:

Enclosed herewith please find our order for twelve No. 141 reverse gears, to be shipped as specified.

We are pleased to state that we have been using Joes reverse gears on several models of Peerless engines for a period of ten years. Throughout this time, we have found the Joes gear very satisfactory. We have a great many motors installed in heavy fishing boats, small tugs, etc., where the reverse gear gets very severe usage, and we find that your gears give steady and reliable service. Another feature of the Joes gear, which is greatly appreciated, is that the reverse has practically the same ratio as the forward drive. This is a decided advantage when used for heavy duty.

Assuring you that we will always be pleased to recommend the Joes gear, we remain,

Very truly yours,

PEERLESS MARINE MOTOR CORP.

ELG/LN

Per *Ed L. Grimm*

If your engine is not already Joes equipped, it can be easily. Just call at the nearest Joes Distributors; or tell us make of your engine, number of cylinders and bore and stroke, the size of your boat and what you use it for, and we will recommend the size and type of Joes Gear that will give you the best service. For sale by all motor boat builders and accessory dealers.

Complete catalog of Joes Reverse Gears, Safety Rear Starters and One-Way Clutches on request.

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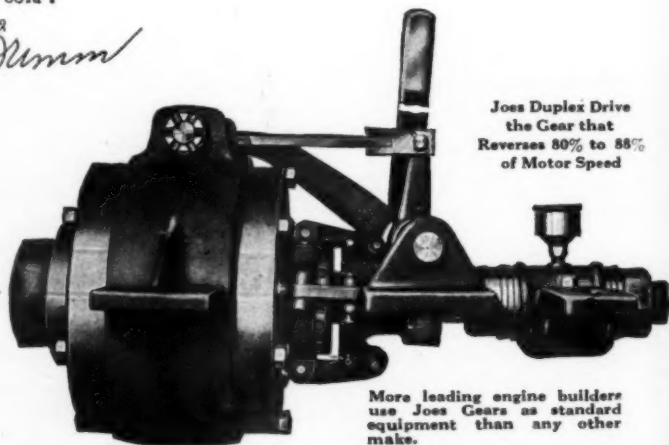
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Joes Duplex Drive  
the Gear that  
Reverses 80% to 88%  
of Motor Speed

More leading engine builders  
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equipment than any other  
make.

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## REVERSE 80%-88% of MOTOR SPEED

# PEERLESS

## A NEW MOTOR

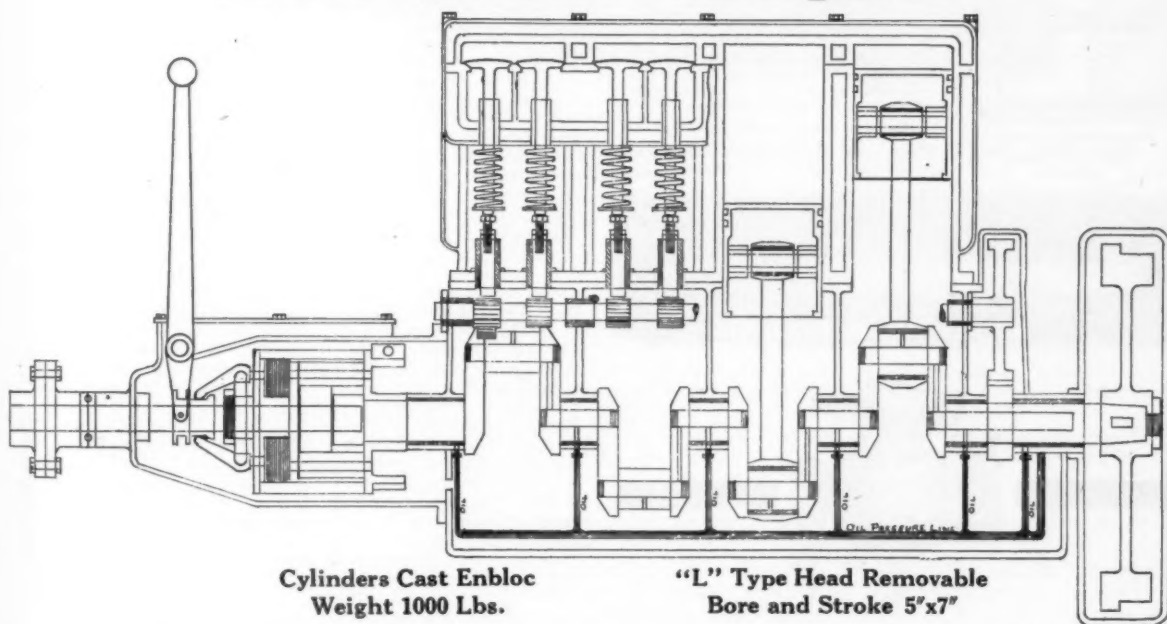
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35 H.P.—600 R.P.M.

70 H.P.—1200 R.P.M.

90 H.P.—1450 R.P.M.

**Price \$1250 Complete**



Cylinders Cast Enbloc  
Weight 1000 Lbs.

"L" Type Head Removable  
Bore and Stroke 5"x7"

### NEW PEERLESS FEATURES

**CYLINDERS.** Cast four enbloc with detachable head, thoroughly water jacketed.

**CRANK SHAFT.** Six bearing crank shaft, nickel steel, machined all over and bored hollow for lubrication.

**LUBRICATION.** Full pressure to all working parts; dry sump type, oil supply in separate tank.

**CONNECTING RODS.** Drop forged nickel steel, fitted with removable bronze bushing in upper end, bronze back Babbitt-lined bearing on crank pin.

**VALVES.** Medium speed model, fitted with cast iron head valves having carbon steel stem. High speed model, fitted with Rich Cobalt steel. Valves entirely enclosed.

**BEARINGS.** All bearings bronze back Babbitt-lined; absolutely interchangeable.

**OIL PUMP.** Special design double pump, easily removed in case of necessity.

**WATER PUMP.** Gear type, of sufficient capacity to cool motor running at cam shaft speed.

**MANIFOLDS.** Intake and exhaust manifolds cast integral, making perfect flexibility possible, also absolute economy in fuel consumption.

**REVERSE GEAR.** Special Peerless multiple disc type, lubricated from motor oiling system. Reverse ratio 80% of forward speed.

**STARTING AND LIGHTING.** Leece Neville 2-unit system.

**IGNITION.** Bosch impulse coupling magneto or battery equipment.

**CARBURETOR.** Zenith or Schebler.

## PEERLESS MARINE MOTOR CORP.

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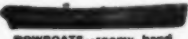
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Close-up view, showing Beach Model propeller as mounted above keel bottom.



CANOE—strong, swift, safe and durable.



ROWBOAT—roomy, hand some with trim lines; designed for safety.



OUTBOARD MOTOR BOATS—vibration-resisting; trim right with any load at any speed.

## Better Boats at Lower Prices

**F**EATURING Thompson's "Better-Built Boats" for 1924 are fine, fast Motor Boats, 16 to 26 feet in length—steady, dry craft that give more speed with less power. Ideal for lakes, rivers, shallow waters and weeds.

Thompson's light weight "Beach Model", (illustrated above) which proved the hit of 1923, may be used in exceedingly shallow, weedy water or run over logs and rocks—or full speed up a sloping beach—without injury to the propeller. Equipped with finest light weight motor enclosed in rain-proof hatch. Will go through ordinary door when turned on its side. Two men can carry it. Women or children can start and operate it. Economical, too—a gallon of gasoline will last four hours. Never has such utility been built into a boat for fishing, hunting or pleasure purposes.

State kind of boat in which interested.

Thompson Bros. Boat Mfg. Co.  
49 E. Ellis Avenue Peshtigo, Wis.



V-BOTTOM AUTO EXPRESS



## Your Motor Boat, Too, Can Have A Schebler

The striking predominance of Schebler Carburetors on marine engines everywhere is conclusive evidence to you of the superior engine performance obtained from them.

Schebler dealers everywhere make it easy for any motor boat owner to obtain the Schebler carburetor required for his engine—whether pleasure yacht or work boat. See your dealer or service station. If the right Schebler carburetor is not available we will see that your dealer gets quick service in supplying you. Ask him about Schebler.

**SCHEBLER**  
The World's  
Finest **CARBURETORS**  
THE WHEELER-SCHEBLER CARBURETOR CO., INDIANAPOLIS, U.S.A.

## Baby Doll A 26 Foot Speedster

(Continued from page 112)

apply the transom covering after the hull is completely planked and dressed. Apply flannelette on marine glue and bind as previously described.

**Wiring:**—There will be a four gang switch on the instrument board, with a separate circuit for the bow light, stern light, engine compartment, with two lights on each side and one for a trouble or spot light. The dash light to be of the switch type, and all wired with brewery cord or battleship type wire. All wires are to be properly cleated and stayed in place with insulated staples and cleats, and made as invisible as possible.

**Motor Installation:**—Motor is to be a 125 h.p. Peerless marine engine. It is to be properly aligned and connected to a 1 1/4-inch shaft, securely pin and key fastened. It should be securely lag bolted to the foundation with 3/8 by 5-inch lag bolts. The exhaust to be of 3-inch inside diameter copper tubing, extending under flooring between the stringers, with an approximate 6-inch offset and extending through the stern about 6-inches above the water line. All joints are to be laid up with brass flanges. A 3/8-inch water supply tube should be arranged from the manifold into the exhaust pipe for cooling. There should be a special ring around the pipe at the stern, packed with asbestos wicking. All water connections are to be of bronze. There will be a special water intake and scoop combined with an angle type globe valve, and an 18-inch length brass pipe for a supply. This should have an elbow and be connected to the pump with suitable hose securely clamped. The overflow is to have a special fitting through the side, opposite the discharge. It should be connected with brass fittings and hose installed under the floor board, and up to the discharge fitting. Controls are to be made in the best manner, and carried so as to operate from the steering wheel. Primer is to be carried to the bulkhead. Gasoline supply to be fitted with air pressure, and have a stand pipe in each tank extending to within 1/8 of an inch from the bottom. Carry gas from one stand pipe into the other tank and from the second stand pipe to the carburetor. Tubing is to be 3/8-inch annealed copper with standard SAE fitting. The air line will extend from the motor pump on a line to the port tank, connecting with a gauge on the bulkhead, as well as the hand pump. This should be connected with 5/16 inch tubing and fittings, the same as the gas tubing. There should be a Renewo globe valve at the tank, as well as at the carburetor. All wiring for ignition and for starting purposes to be carried out as per instructions from the motor manufacturer. The following fittings should be located on the instrument board. Switch, air gauge, oil gauge, tachometer (Corbin type with counter), air pump, primer, dashlight over each cluster of switch type, clock if desired, motometer, if desired, horn button on the wheel, and lighting switches.

## The Proposed Coast Guard Fleet

(Continued from page 23)

desired. These craft, it was stated, would not stand up under the ten year campaign the Coast Guard counts on having to wage against the rum runners, that they would be expensive to operate and man, would require over-large crews, and would not be suitable from the standpoint of speed and draft.

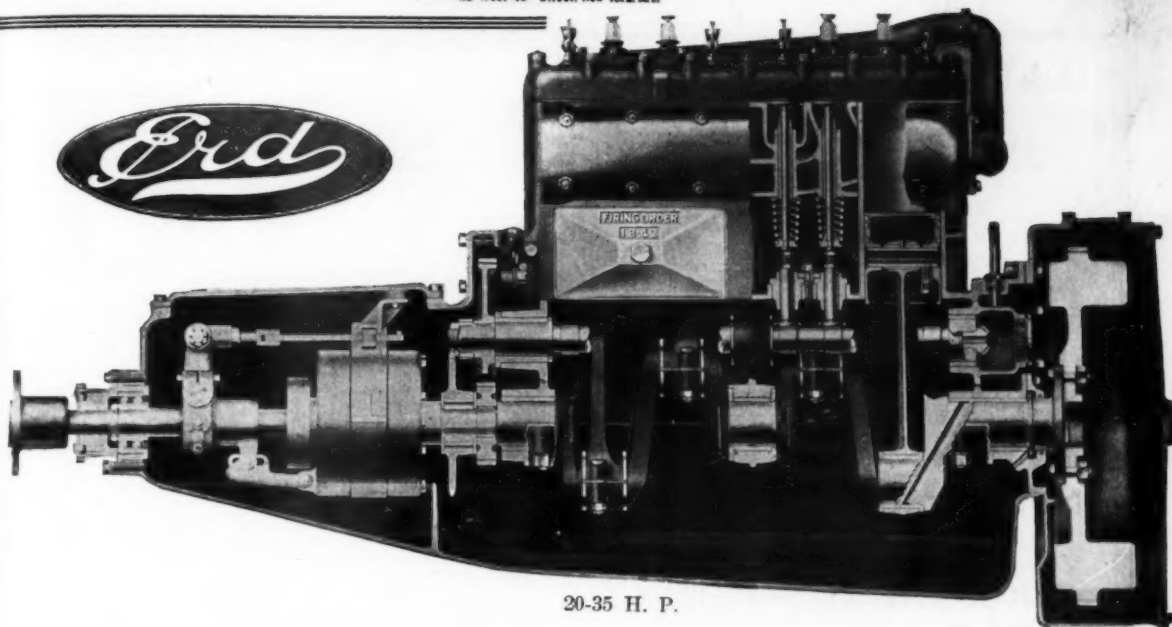
To operate the new fleet the President would be authorized to commission 201 additional officers and 25 chief warrant officers, temporarily; in addition provision is made for a temporary enlisted force of 2,205 men.

The Coast Guard has not yet completed details and specifications of the motor boats it is designing, but three types are under consideration. The first, a cabin cruiser, is 70 feet long, 14 feet beam, and 3 feet 3 inches draft, with two 200 h.p. engines, developing a speed of 18 statute miles. Living accommodations are provided for a crew of seven or eight and complete in every respect for keeping on sea patrol for indeterminate periods. A one-pounder gun and at least one machine gun would be the armament.

The second type, of the Seabright dory pattern, is 36 feet long, with have 180 h.p., 18 miles speed, and accommodations for over night patrols for three men, and possibly machine gun armament. The third boat would be only slightly smaller, but without living quarters or heating arrangements, and with a speed of at least 25 miles. The first type would be used on extended outside patrol; the second for less extended patrol between harbors and inlets; and the third for speedy work in harbors and from shore stations in the vicinity of rum landing points.

(Continued on page 120)





20-35 H. P.

## THE LOG OF THE "ERD"

Massive, three-bearing, CHROME NICKEL STEEL crankshaft.

Largest bearing of any motor its size.

End play adjustment for crankshaft—the only Marine Motor so equipped.

Lubrication—full force feed system by internal gear pump through HOLLOW CAMSHAFT and drilled crankshaft to all bearings.

Main bearings, connecting rod bearings, and even camshaft bearings bronze back, nickel Babbitt lined type.

Main bearing studs, connecting rod bolts, even cylinder head studs, nickel steel, heat treated.

Extra large valves of nickel steel alloy.

Hollow valve tappets, easily removable without disturbing valves.

Bronze gear water pump with salt water fittings throughout.

Most cleverly designed hot-spot manifold.

PARAGON REVERSE GEAR, nickel steel shaft, running on double row annular and thrust ball bearings. Stuffing box.

All working parts completely enclosed. No oil leaks.

Not a single grease cup on the whole motor.

UNBELIEVABLE POWER! More than 22½ h.p. at 1000 R.P.M., 35 h.p. at 1600 R.P.M.—42½ h.p. at 2100 R.P.M.

Engineering Science has made such progress that bore and stroke no longer determine the power output of an engine.

Excellence of design, and the skillful combination of manifolding, carburetion, combustion chambers, valve areas and timing, perfect balance, as well as properly proportioned active parts spells.

## "POWER"

Add unexcelled workmanship and the highest grade of materials and you will have pleasing quietness, great smoothness and flexibility, economy of operation and rugged strength.

Great speed can be obtained and held indefinitely with such unbelievable silence and ease that previous motor performances are no longer a measure of efficiency.

Those are the concrete qualities of the ERD S-4 that result in long life, low gas, oil and upkeep cost, and stamp the S-4 as a motor worthy of the closest investigation, as well as of the utmost confidence of every boat owner.

*It Positively Establishes a Paragon in the Fine Marine Motor Field, gives the Public Motor Values Positively without Precedent, and Establishes Prices which Absolutely Revise all Previous Standards.*

### NEVER WAS A MOTOR SO FINE PRICED SO LOW

*Other ERD Marine Engines well known to the boat owners are the ERD 4¼ x 6 and the ERD 5 horsepower Ball Bearing Frictionless Motor for small boats. Write for Literature.*

### PRICES

S-4 Unit Power Plant, equipped with Robert Bosch High-Tension Magneto with Impulse Starter, Carburetor, Paragon Reverse Gear, Champion Spark Plugs and Packard High Tension Cables..... \$375.00

S-4 Unit Power Plant with Electric Starter, Generator, Distributor, Coil and Cut-out Instrument Panel with Ammeter, Switch Dash Light, Oil Pressure Gauge, Willard 8-volt Battery, Packard High Tension Cables, Champion Spark Plugs, Carburetor, Starting Crank and coupling..... \$675.00

# ERD MOTORS CORPORATION

SAGINAW, MICH., U. S. A.

## TOPPAN BUILT



**SEA DOG** 25-Mile Express Run-  
about, Single or Double  
Cockpit Powered with 50 H. P. Kermath and 60 H. P.  
Wisconsin Motors.

Write for new circular of this famous big seaworthy 22 ft.  
runabout and the

**New Toppan 30 Footer**  
A 20-Mile Raised Deck Cruiser

**Outboard Motor Boats**  
With the Popular ELTO MOTOR  
Send for details of our combination offer.

**Toppan 22 ft. Power and Sailing Dories**  
Now ready for early delivery.

**Toppan Boat & Engine Co.**  
125 Riverside Avenue Medford, Mass.

## Woolsey's Marine Paints



### WOOLSEY

Copper Paints and Marine Paint  
Specialties are considered standard

Copper "Best" Paint Brown—Yacht  
Copper Paints—Special Red and Special  
Green—Yacht Bottom Paints, Copper  
Bronze, Light Sea Green and Regatta  
Green—Yacht Whites, Gloss or Flat—  
Adamant Deck Paint—Best Spar and  
Sparon (Spar) Varnish—Engine Enamels  
—Marine Mixed Paints—Elastic Seam  
Compound—Boat Bottom Seam Com-  
pound, etc.

Copper Oleate Fish Net Preservative

Send for color cards and booklet—  
How to Paint a Boat—Free



**C.A. Woolsey**  
Paint & Color Co.  
Established 1853  
Jersey City N.J., U.S.A.



## Better Engines by Farr

(Continued from page 20)

salesroom of an automobile concern that has, long since, passed out of the picture. I was impressed by the personnel of the company, but before making the final step decided on doing a little personal investigation.

This was fortunate. I saved my money.

"Returning from Seattle I located in Cincinnati and, while I was not at all dissatisfied over my prospects, I began looking around for an outlet for some of the steam I had worked up in the automobile business. In a sense I had gone through the pioneering days of the motor car, and it seemed logical for me to think of segregating the marine engines for marine use.

"I had always loved the water—even when a kid, I could get more fun out of puddling around on a raft than in riding a lumber wagon—and the more I thought of marine motors for their strict use the more I became infatuated with the idea. I decided to look around. I did. Sometimes a little looking ties up desire with action, and the next thing I knew I was out of the automobile business and up to my neck in the building of marine engines.

"Sounds perfectly simple. It was.

"The change came almost overnight, but not, I want you to know, without a good deal of quiet looking and uninterrupted thinking. It's lucky I had developed those two things—quiet looking and uninterrupted thinking—because I have had to place great dependence on them during the past twelve or thirteen years."

"Getting into the marine engine field put me, so I believed, in a business with a definite purpose. That purpose was to build a class of engine for the marine trade—an engine that would give service for years to come.

"To accomplish this it was necessary to study the field from all angles. It was tough work in the beginning. Awful tough work. Some of the things we had to think about were:

"Lack of sales—great cost of getting business—manufacturing problems—building one product and refining it—standardizing our motor—getting the product down to a point where we could truthfully admit, to ourselves, that it was dependable.

"To accomplish these things was more difficult than many persons might think. We had to take our engine and build it from the bottom. Because we were in a more or less untried field, we had few precedents. We had to learn. I wanted an engine that would be foolproof. Or, rather, as nearly foolproof as it could be made. Machinery is something that cannot always be safe.

"I know this because there are persons in the world who aren't able to run a wheelbarrow up a straight line, let alone cultivate a friendly attitude toward a piece of mechanism. Frequently such persons want boats. Wanting them, they usually buy them. Naturally, then, they become possessors of a motor; it became our job to make something that would give satisfaction.

"I started out with the thought of keeping faith with the marine engine trade—to make purchasers know that they were getting the worth of their money. The Kermath Manufacturing company has held closely to that ideal. In other words, we don't want customers to take chances. That, it seems to me, is one of the great troubles with this business. There are too many salesmen fighting for orders instead of principles.

"Under no circumstances does one of our dealers ever compete with the factory when it comes to filling an order. If a customer writes to us direct for a motor we insist that the dealer in the territory in which the customer is located receive his commission. This is the only way to build up a business. It is the only way to keep faith with dealers and to make them work for you. If a dealer makes money the manufacturing concern cannot help but profit along with him. There isn't such a thing as a sales organization founded on any other basis.

"As a result of this policy forty per cent of our output is now being shipped to foreign countries. We have built up a business because of these things—fairness to our dealers, fairness to purchasers of Kermath motors—and no business can succeed any other way."

On our own hook we are going to print a few other things regarding Jack Farr.

In his narrative of his company's policies he did not touch on the things he had done, himself, to pull it along.

Farr's nervous energy pulled the Kermath along when a bulkier director might have failed. Naturally, the concern did not have unlimited capital when it started. For Farr, it was a case of watching both doors—front and back. He knew what he wanted in a motor and he insisted on getting that product; as head of the sales force he would market no other.

(Continued on page 120)

# BOSCH



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Where sureness and absolute dependability are of the first importance, you will invariably find Bosch High Tension Magneto Ignition. The Bosch life-giving stream of fire will add the same stimulus, economy and worthiness to your gas engine that it has to more than 4,000,000. Bosch Magneto Ignition is conveniently available for your automobile, truck, tractor, motor boat or stationary engine. Insist on Bosch on any automotive product you purchase — and the nearest Bosch Service Station will install it in a few hours on your present engine.

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## Better Engines by Farr

(Continued from page 118)

Here is a story that illustrates his point of view better than any other story. I know of him. It was told to me by a Detroit manufacturer who has known Farr a good many years. Jack doesn't know the story is going to be told here, but he will recognize his friend when he reads.

"I went to Jack Farr in 1914 and told him I wanted a motor of a certain type for a boat," related this manufacturer. "I wanted him to build it. He went over my plans and tossed them aside.

"I can't build that," he said.

"Why?" I inquired.

"Because it won't stand up."

"I know it won't, but I just want it for this season—next year I'll get a better one."

"Get someone else to build it for you, then," snapped Jack. "Besides, I'm not in the business of building special motors. I'm building Kermath motors."

"But you would build a special job—if it was a good one?"

"Mebbe."

"You won't build this one?"

"No."

"And the interesting part of it was that—he wouldn't. I simply couldn't coax him into it and I knew, when I was talking to him, that orders were pretty scarce in his plant."

There was another occasion when a disgruntled customer came to Farr and complained:

"This darned motor you sold me isn't worth a cuss!"

"What's wrong with it?" inquired Farr.

"So-and-so and so-and-so," spluttered the buyer.

"When did you find out that?"

"Last week."

"You're late—I knew those things when the motor went out."

"You did! Why didn't you tell me?"

"I did." And Farr recalled the conversation, almost word for word, that he had had with this same man.

The atmosphere cleared. The customer smiled. "Guess I do remember," he admitted, a bit sheepishly.

"Bring your motor in—we'll fix her up," declared Farr. "Sorry you've had trouble, but, at least, we didn't misrepresent our product."

Farr was asked if he recalled that.

"Sure," he answered, "now that you have mentioned his name. But that wasn't an unusual happening during those first years in business. I did not attempt to hide defects then; I don't believe there are any in our motor now, but if there are I surely will point them out and remedy them, if possible. That's the only way in which a company can build confidence."

## The Proposed Coast Guard Fleet

(Continued from page 116)

They will all be of heavy construction, with extra consideration given to seaworthiness, and in the case of the two larger craft to comfort for their crews. They will not depend upon their speed, but rather on force of numbers and weight of armament, to subdue the rum runners, alien smugglers, and narcotic smugglers.

Admiral Frederick Billard, the new Commandant of the Coast Guard, is pleased with the results of the President's decision, as a start in the program planned. He is willing to give the Navy boats another thorough trial, in the expectation that should they be found unfit later, they may gradually be replaced by better craft. The motor fleet, he declared recently, would be of distinct military advantage in case of war. The government would have at hand a thoroughly capable squadron of seaworthy craft for patrol and anti-submarine work, so that—and this should appeal to yacht owners—there would be no such need as that met at the opening of the recent war, of commandeering private yachts for these purposes.

In submitting his decision to the President Director Lord stated that to construct the twenty steam cutters previously requested by the Coast Guard would have taken at least nine or ten months, and so delayed the commencement of the work to be undertaken. Appointments of commissioned and warrant officers, and enlistment of the crews, on a temporary basis was included so that they should continue only so long as may be necessary in the program.

The estimates are now in the hands of the House committee on Appropriations, and are expected to be included in the first deficiency appropriation bill to be reported to the House. When this will be is not known, but certainly shortly after this arrives in print.

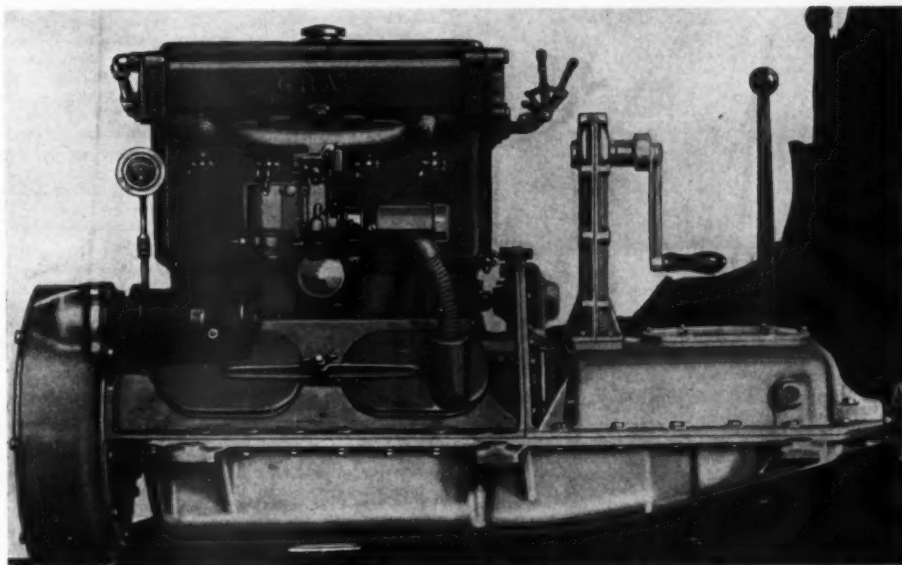
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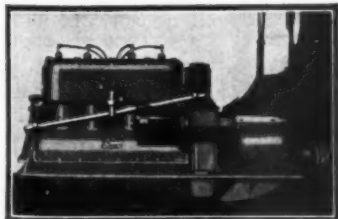
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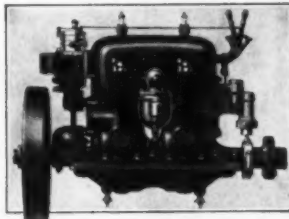
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BOX 300

## Better Boats To Race

(Continued from page 40)

in any kind of water but a dead calm. The instance of at least one boat turning over at the start of the first Gold Cup race last summer will be recalled. This boat turned over, not due to any poor handling, lack of experience, or anything of that kind. It resulted solely from the boat being too small, too narrow, and out of balance as far as power plant and hull was concerned. The same thing would be inevitable in such a craft under similar conditions at any future time.

The rules, as they existed for the first Sweepstakes race (1923), undoubtedly tended toward the development of boat speed as well as power plants. Some engine manufacturers, naval architects and a few others would probably have continued to have been interested in another race along similar lines, but interest in the race would not have spread very far outside of what might be called the trade and industry. This, the Committee concluded, was not the fundamental object of the Sweepstakes races, and therefore, to interest the general public in such a contest, rules must be provided which would assure them of a serviceable and practical boat, and one which could be obtained at more than one or two boat building plants in the country.

The Committee believed also that it was of the greatest importance to select a size and type of boat which would interest persons from different localities. Water conditions are such at various places that a boat of considerably different type and size is necessary to best meet such conditions. The rules must be made flexible enough so that a New Yorker who is interested in one type of boat to meet his own local conditions will be able to compete in the Sweepstakes, as well as the Detroitier who requires another type of boat for his home waters, and also the man at Chicago who requires a third type, one from the Mississippi Valley who takes a still different boat, etc. Another point which came up for discussion was whether the rules should be such that boats fitted with motors of a moderate horse-power would have a fair chance with boats of a large horse-power. The Committee believed that a proper balance could be worked out so that a 25-footer with a small motor would have a fair chance to win against a larger boat fitted with a large motor without undue sacrifice of speed, seaworthiness, serviceability, etc., in either size of hull.

As an example of how this would work out, we have but to review the performance of Edsel Ford's Woodfish. This boat was approximately 32 feet in length, powered with a full-sized Liberty motor. She was one of the best running, most comfortable and altogether serviceable boats which has ever floated. Besides being an attractive outfit in every sense, she was the fastest boat of her class ever built as far as records in competition show. At Detroit in 1922, Woodfish made one two and a half mile lap at the speed of 53.0 m. p. h. At Buffalo, Woodfish completed one five-mile lap at a speed of 53.6 m.p.h. This speed compares very favorably with the speeds made by the fastest craft in the 1923 Sweepstakes race at Detroit, even though the speeds made in the latter race were made by boats which were only 25 feet in length and mere shells compared with Woodfish's construction. Probably the power plants were developing approximately the same horse-power. Therefore the Committee adopted a rule for maximum piston displacement which is in direct proportion to the length of the boat, that is: the piston displacement shall not exceed the cube of the boat's length divided by 19. This plan also provides a place for a man who believes in a 25-footer as well as for those who believe a 30 or a 32-footer is the ideal craft and the only one really worth owning.

Adopting a sliding scale of piston displacements also does away with the claims that have been advanced that the race was provided for one or two particular builders of motors which happened to have models and sizes which would fit the class. In the future all makes and sizes of motors will be eligible and, by making a hull of the proper length to fit the motor, an equal chance to win will be had by all. The manufacturer who has a 6-cylinder 5 x 7 motor has but to design a hull of proper length to meet this piston displacement. The motors of 1,050 cubic inch, of which there are several makes, as well as those having a piston displacement of 1,237, 1,350, 1,650, etc., etc., will all be available for Sweepstakes boats in the future.

The Committee gave considerable thought to the question as to whether hull restrictions should be adopted, such as minimum weight restrictions, size of scantlings, etc., and they came to the unanimous conclusion that it would be impractical to impose any such restrictions. However, the thought was also unanimous that something should be done which would tend to develop bigger and better boats, and which would automatically eliminate soapbox construction. This was accomplished by providing that approximately thirty miles of the race in

(Continued on page 126)





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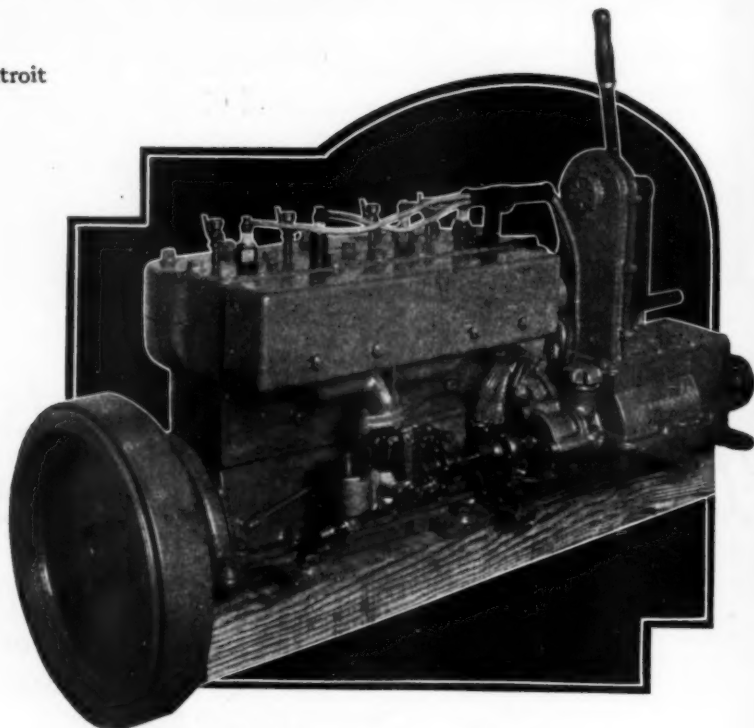
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The price of \$187.50 F.O.B. Detroit covers the engine with the following equipment: Philbrin Dry Battery, Ignition, Zenith Carburetor, Oil Pressure Gauge, Starting Crank, Spark Plugs, Spark Plug Wiring, and Propeller Coupling. Hand-somely finished with gray engine enamel.

### Some Details of the INTERNATIONAL—16

**MANIFOLD:** Special design with intake and exhaust cast integral, enabling operation on either gasoline or kerosene.

**CARBURETOR:** Zenith (one inch size). This carburetor gives splendid results as well as exceptional economy. Only one adjustment is necessary, the rest is automatic, the speed instantly responding to the throttle.

**LUBRICATION:** A bronze geared oil pump draws oil from large reservoir in base and distributes it to troughs beneath connecting rods. A pressure gauge, which may be mounted on dash or bulkhead, gives visible evidence at all times as to lubrication. A float gauge indicates quantity of oil in base.

**WATER PUMP:** Made entirely of bronze. This is of the gear pump type and is silent in operation. Water is forced through water jackets of cylinders, cylinder head, intake and exhaust manifolds. This insures a cool exhaust as well as a properly heated intake.

**CYLINDERS:** Four, cast en bloc. This cylinder casting is the real foundation of the motor as the casting includes also the upper half of crank case, the supports for crankshaft bearings and camshaft bearings, the valve stem guides, valve ports, water jackets, and manifold passages.

**CYLINDER HEAD:** Removable cylinder head, water-jacketed, containing spark plugs and relief cocks. Quickly removed for scraping carbon, grinding valves, etc.

**SALT WATER EQUIPMENT:** All INTERNATIONAL motors are equipped for salt water use.

### IMPORTANT DIMENSIONS

Length overall, 28 inches.  
Diameter of flywheel,  $14\frac{1}{2}$  inches.  
Center line of crankshaft to bottom of crankcase,  $5\frac{1}{4}$  inches.  
Center line of crankshaft to bottom of support lugs, 1 inch.  
Center line of crankshaft to top of cylinder head,  $14\frac{1}{4}$  inches.  
Engine bed timbers should be spaced  $9\frac{1}{4}$  inches.

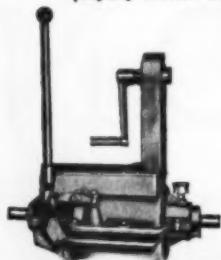
### Extra Equipment

If you need a reverse gear, magneto, etc., we recommend the following equipment which we have tested and found especially suitable for use with the INTERNATIONAL-16.

Syracuse Enclosed Reverse Gear with built-in rear starter, ball thrusts and couplings .....	\$61.00 extra
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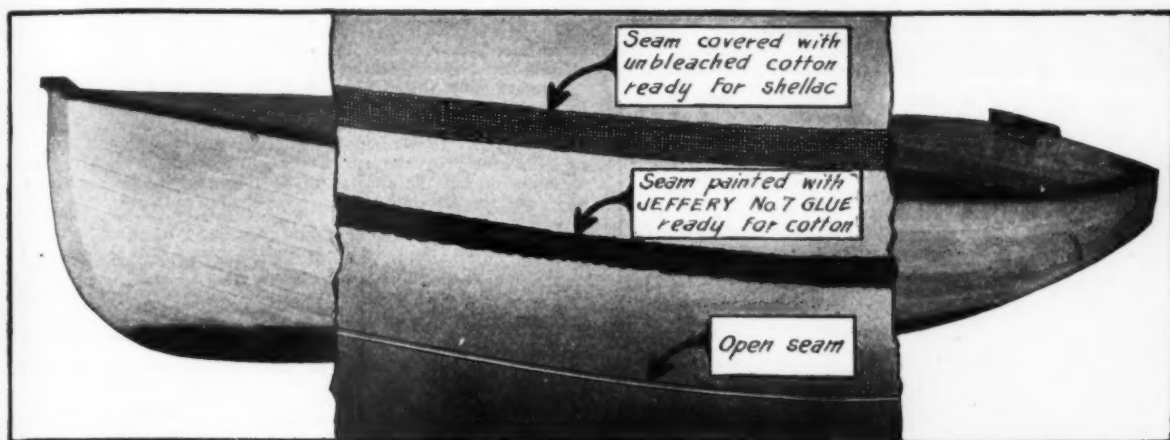
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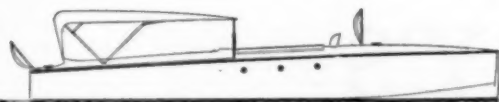
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A Searchlight for any purpose. Arc Searchlights for 110 volts. Incandescent Searchlights for low voltage. In sizes from 7 inch to 60 inch. High efficiency. Moderate price. Special glass mirror. Sturdy cast bronze fittings.

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## Better Boats To Race

(Continued from page 122)

the future should be laid out in open water of Sound, Lake or Bay. Automatically, this will eliminate the weak craft and will cause architects to specify sounder construction. In the future, about 120 miles of the race course will be laid out in sheltered water with thirty miles outside.

Another great improvement, which will tend toward better boats as well as develop more interest in racing, is the provision that the boats must be built with a carrying capacity for four persons and carry four persons in the race itself. However, an exception is made, that, should any owner not care to carry a crew of four, he may substitute 300 pounds dead weight, placed in the passengers' cockpit.

Another step in advance was the provision adopted that boats shall not be equipped with any form of gear box, and that propeller must be connected direct to engine and turn at engine speed. It was also voted that the boats must carry sufficient fuel for the entire run of 150 miles and that no refueling during the race is to be permitted. The qualifying speed for the 1925 race was set at 40 m.p.h., the same as it is to be for the 1924 event.

## RULES FOR 1925 SWEEPSTAKES RACE

1. The race shall be managed and supervised by a Race Committee of five to serve one year, appointed by the President and confirmed by the Executive Committee of the Yachtsmen's Association of America. The Race Committee shall be in charge of all details of the race and shall have power to appoint their assistants, sub-committees, officials, etc. Rulings of the Race Committee shall be final.

2. The Race Committee shall serve for a period of one year and thereafter until their successors are appointed.

3. The race shall be run under the latest A. P. B. A. rules, except as provided by those rules approved by the Executive Committee of the Yachtsmen's Association on January 9, 1924.

4. The Race Committee shall determine the distribution of prizes. No prizes shall be presented within twenty-four hours after the first boat finishes.

5. These rules shall remain in effect without change, through and including the 1925 race; changes, if any, in these rules to become effective subsequent to 1925 race, may be suggested by the Race Committee and if approved by the Executive Committee of the Yachtsmen's Association of America, may be put into effect not earlier than eighteen months after their announcement and publication.

6. The length of the race shall be one heat of at least 150 statute miles.

7. The length of each lap of the course shall not be over four statute miles nor less than two miles, provided however, that thirty miles of the race course at approximately the midpoint of the race, shall be laid out in the open water of Lake, Sound or Bay, as free from turns as possible. Whenever possible, single turning buoys shall be used with a straightaway between.

8. The race shall be run in such a direction that the boats shall pass turning buoys on their port hand.

9. The hulls of competing boats shall be at least 25 feet in length on the water line and shall not have a water line beam at their widest section of less than the square root of their water line length.

10. The hulls of competing boats shall have no breaks in the longitudinal continuity of the immersed surface, not more than one lifting surface, and must conform to the committee's ideas of what is generally classed as a displacement type. The keel and chine (or bilge) must be continuous and must extend from the bow to the stern (or stern post). Steps, either transverse or longitudinal will not be permitted. Surfaces on each side of the keel line between the keel and the chine (or bilge) must be continuous and not contain breaks, jogs or notches of any description.

Note: Sea Sled model acceptable. There shall be no movable plates, hinged devices, adjustable steps or planes on the bottom of the boat and no catamaran type of construction. The chines must not project below the horizontal level where the planking joins the keel at any point in the same cross section of the hull. Not over three bilge bairers will be permitted, no more than two of these in any one compartment, and each of them must be limited to not more than four square inches opening inside the orifice and not be over five inches in any outside dimension. The decks must be strong enough to safely carry the weight of two men and thick enough to hold all fixtures and fittings securely. The entire construction must be strong, durable, seaworthy and safely manageable. Boats must carry the full equipment required by the steamboat inspection laws. Clinker-built hulls are acceptable, provided the laps of the planking do not project more than one inch, where one edge of a plank overlaps another. A boat must finish with the full equipment required by these rules that she started with, except fuel and oil. Should any of it fall overboard, same must be retrieved or replaced as quickly as possible or otherwise the boat will be subject to disqualification.

11. Competing boats shall be fitted with at least two transverse bulkheads, practically water tight.

12. Competing boats shall have seating accommodations for at least four persons. In the race, a crew of four must be carried on board the boats at all times provided however the owner may substitute, in lieu of two of the specified crew, a dead weight of not less than 300 pounds, same to be placed in the boat upon the regular and usual seats with which the boat is equipped for passenger use.

13. Competing boats must have the motor compartment entirely closed in with hatches. Hatch covers must remain closed while the boat is under way except when momentarily opened for inspection or adjustment of the motor.

14. The power plant shall be of the internal combustion type.

15. The total maximum piston displacement shall not exceed the amount determined by the following formula:

$$L \cdot W \cdot L^3$$

Maximum allowable piston displacement =  $\frac{19}{19}$ 

16. Engines must exhaust at the stern through transom when possible, or under water when under way.

17. Engines shall be equipped with an efficient reverse gear or method of reversing and idling.

18. Engines shall be equipped with an efficient self-starter, carried complete during race.

19. Measurement of hulls and power plants must be verified prior to the race by a Committee appointed by the Race Committee.

20. Entries must be received by the Race Committee at least fifteen days before the date set for the race. An entry fee of \$100 must accompany the entry.

(Continued on page 146)



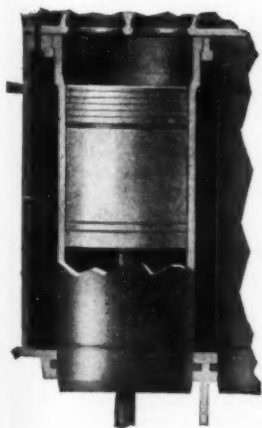
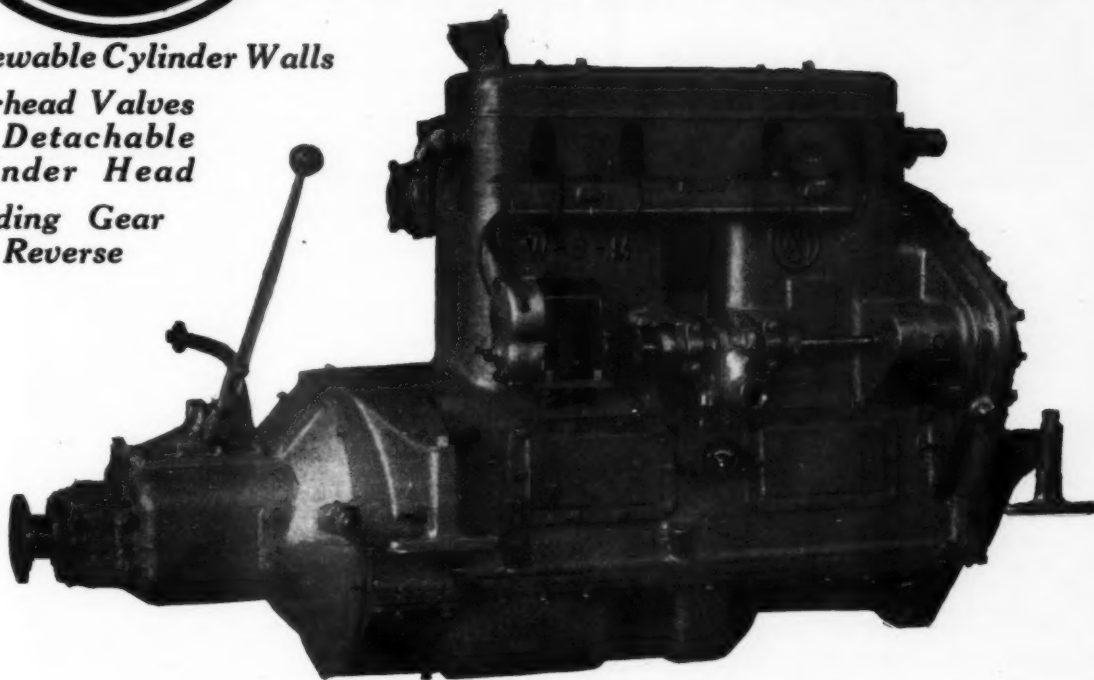
# W-S-M

## MARINE ENGINES

*Renewable Cylinder Walls*

*Overhead Valves  
in Detachable  
Cylinder Head*

*Sliding Gear  
Reverse*



*Illustrating the W-S-M  
Renewable Cylinder Sleeve*

THE W-S-M Marine Engine is built to last indefinitely. Every moving part and every wearing surface can be renewed at comparatively small expense.

Each W-S-M cylinder is simply a removable sleeve which can be replaced without moving the engine from its bed. These sleeves are accurately machined with walls of uniform thickness.

This feature alone is sufficient reason for you to give preference to the W-S-M. But it is only one of many W-S-M features. Let us tell you the others.

*Write today for Catalog "M-G"*

Medium Duty, 28 to 46 H.P.

High Speed 48 to 60 H.P.

### Wilbur H. Young, (U. S. & Foreign)

SOLE DISTRIBUTOR

522 Fifth Avenue, New York City

Manufactured by The Wellman-Seaver-Morgan Company

*Advertising Index will be found on page 150*

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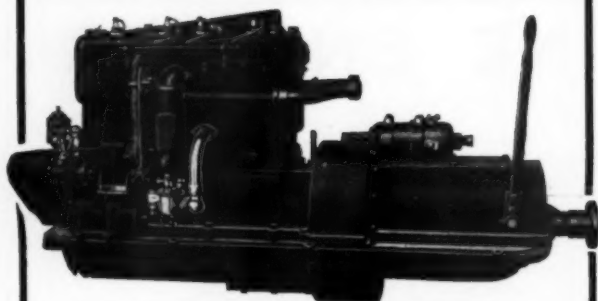
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4

XUM

# MILLER

## Four Cycle

# MARINE MOTORS



Miller Model R-4, 28-35 H. P. 400 to 500 R. P. M.  
Bore  $5\frac{1}{4}$ ". Stroke  $7\frac{1}{4}$ ". Swings a 26" 3-blade wheel.

Wherever Miller Motors are used they are favorably known for their reliable service, excellent design and honest construction. They have been on the market for nearly twenty years, have penetrated to almost every country of the world, and are exceedingly popular in many localities among owners of fishing boats and commercial craft, as well as for pleasure boats.

We have found it good policy to give always a little more power and endurance than we claim. For instance, notice that the medium duty motor shown above is rated at the very conservative speed of 400 to 500 R. P. M. although it is built to run as smoothly as a watch at any speed from 100 to 1,000 R. P. M. Its big bore and stroke give ample power to drive a much heavier boat than the ordinary medium duty engine of the same rated horsepower.

This conservative rating policy shows that we are more interested in the future satisfaction of Miller customers and the future reputation of Miller Motors than we are in the immediate sale of a few more motors through exaggerated claims.

The best of modern design is used in the Miller and there are many advanced features such as are used only in the higher class marine power plant. And in the Miller you get these features at a distinctly popular price.

Write today for complete catalog and prices.  
One, two and four cylinder models, 4 to 50 H. P.

**Successful Kerosene Fuel Attachment**

Ask for details of this device

## Millers Motor Corporation

2333 North Talman St., Chicago, Ill.

## Radio Through the Binoculars

(Continued from page 29)

not plugged therein. The A and B batteries can be nicely located in the engine room if it is not too far away, or in a convenient locker, and the leads fished in back of the planking completely out of sight and up to the set. It will be found that fishing these leads is not so much of a job if it is handled in the same way that telephone wiring is handled, namely, using stiff wire with a loop on the end and pulling the wires between the paneling and planking up to the point desired.

Should a power amplifier be desired in addition to the receiving set for greater amplification on weaker signals, the power amplifier may be built in some other part of the boat other than the location of the receiving set. It does not make any noticeable difference whether the loud speaker is located some distance from the receiving set or connected close to it. Thus there will be no loss of signal strength by placing the power amplifier remote from the receiving set even if at the other end of the boat. Oftentimes there is a locker space available where the power amplifier can be placed but where the receiving set would be too large.

An example of a built-in transmitting and receiving equipment, planned by the writer, was shown aboard the 54-foot Great Lakes Express Cruiser at the New York Motor Boat Show. This installation was not a case of hastily placing the radio in some convenient location in the boat and wiring it up in a haphazard manner. As a matter of fact this most complete transmitting and receiving equipment was very carefully planned as to location and wiring. The convenience of the set with regard to operation was carefully considered, as was also the desirability of remote control, and loud speaker operation in various parts of the boat. The open circuit line, as previously mentioned, was well carried out in this radio installation for a two-wire cable was carried in steel conduit between the paneling and planking and ran from the receiving set in the forward cabin clear to the after cockpit.

The receiving set was supported by four turned pillars and the transmitting set placed beneath in such a manner that the two practically formed one compact unit. As will be seen the transmitting and receiving set made a splendid appearance in the forward cabin and at the same time were completely out of the way although very accessible. The small cabinet to one side of the sets contains the send-receive switch and the four pole, double throw snap switch. The send-receive switch is a single pole, double throw switch for throwing the antennae from transmitting to receiving. The four pole, double throw snap switch lights the filaments in the transmitting set and starts the dynamotor system, remotely controlled in the engine room. When operating the set it is merely necessary to throw the knife switch to one side for transmitting and turning the snap switch thus feeding the transmitter with 500 volts direct current for the plates of the transmitting tubes and 8 volts for the filament supply. The dynamotor system for the transmitter is a specially wound machine with a single armature being wound specially for 32 volt drive and 75 watt, 500 volt plate supply.

The antennae system specially designed for this 54-foot Great Lakes Cruiser is particularly noteworthy and quite distinctive and original in that it makes use of all mast rigging for a part of the actual antennae system. In viewing this trim spar one would never suspect that the rigging of the mast formed the actual antennae for the radio equipment, as there was nothing that would designate it as such aside from the neat insulators insulating the wiring from the decks. An outside wire was carried entirely around the yard arm up over the top of the mast and down. The three stay cables supporting the mast also form a part of the antennae and all of these wires were connected in such a way that they actually formed one long continuous cable. The wire used on this rigging, forming part of the antennae was special heavy phosphor bronze cable. Electrostatic insulators insulated this wiring from the decks. This antennae was rather like a large cage aerial and was extremely neat in appearance and very efficient in use with the six-tube radio frequency receiving set which is furnished aboard this cruiser.

The power amplifier forming a part of the loud speaker system was located in a gun locker in the forward cabin away from the receiving set where it was concealed behind a neat leaded glass door. A Western Electric loud speaker could be plugged in, in any part of the boat without in any way disturbing the rest of the equipment. This power amplifier, mounted independently and off to itself with all wiring concealed, is shown in Figure Three (3). The ground system, as indicated by Figure Four (4) where a small portion of the copper of the keel may be seen, on this 54-foot Cruiser consisted of two copper strips running  $\frac{3}{4}$  of the length of the keel on both sides. The after ends of the copper strips were

(Continued on page 132)



# TOBIN BRONZE

REGISTERED U.S. PAT. OFF.

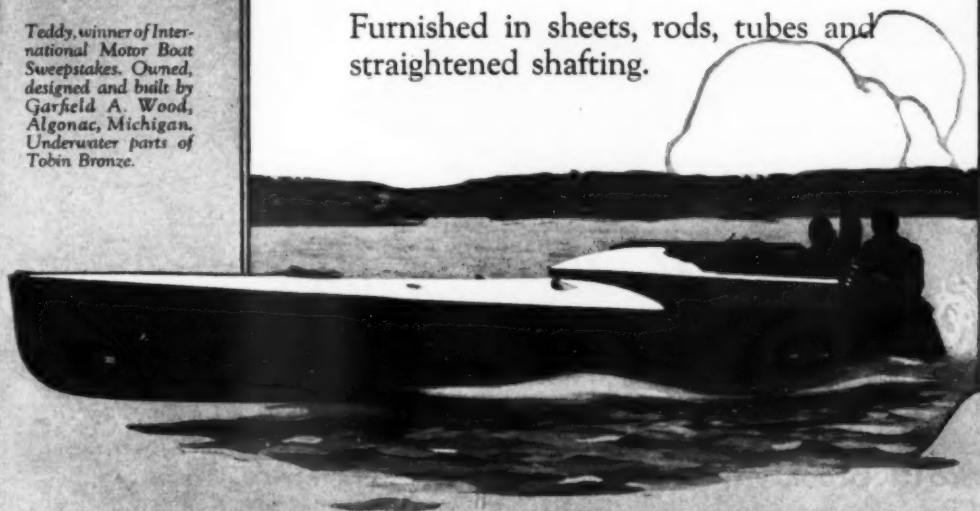
## For Underwater Parts

Tobin Bronze is the unrivalled metal for under-water parts because of its remarkable resistance to corrosion. To this is added great tensile strength, high yield point, toughness and uniformity of texture.

For these reasons it is almost universally selected by motor boat builders and motor manufacturers of recognized standing.

Furnished in sheets, rods, tubes and straightened shafting.

*Teddy, winner of International Motor Boat Sweepstakes. Owned, designed and built by Garfield A. Wood, Algonac, Michigan. Underwater parts of Tobin Bronze.*



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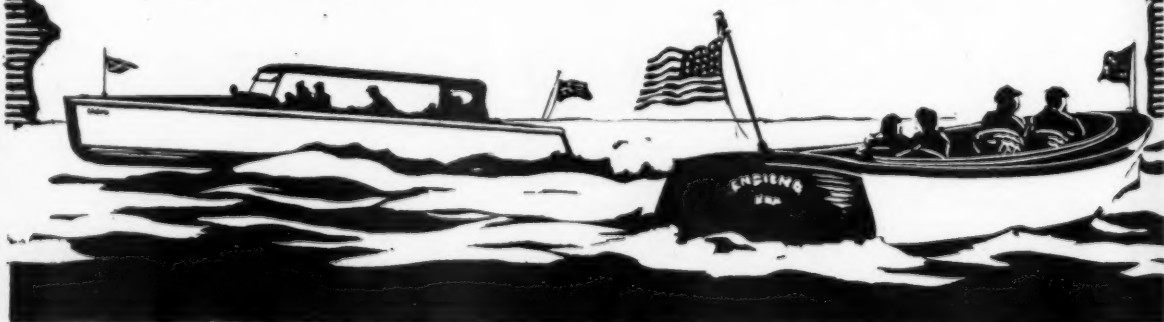
*"All the Name Implies"*

Send for 1924 folder describing the new  
type Multi-Cone Clutch.

**STANDARD GEAR COMPANY**

2819 Brooklyn Ave.

Detroit, Mich.



Advertising Index will be found on page 150

THIS SYMBOL IS YOUR GUARANTEE OF SATISFACTION

LA

## A brand new outboard

## L-A Twin



**L**IGHT in weight—Powerful (3 H.P.)—Slipping clutch propeller (patented)—Automatic tilting of friction type—Most powerful magneto in outboard field—Rope and rudder steering—Indestructible gas tank—Under water parts made of non-corrosive Lynite—Quiet exhaust—Alemite lubrication. These are the features which mark the new L-A Twin as an outstanding achievement in the field of outboard motors.

The new L-A Twin is the lightest weight outboard motor of its power now offered the public. It embodies all the sturdiness, all the ruggedness for which L-A motors are famed, with the added advantage of lightness. It is a more powerful motor, a speedier motor, a smoother running motor—with practically all vibration eliminated. To see the new L-A Twin is to desire it, so strong is its appeal to the boatman and resorter.

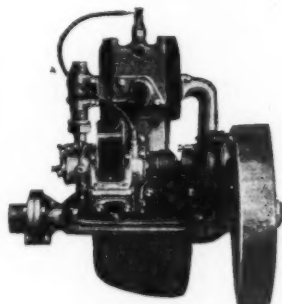
The L-A Golden Rule Selling Policy under which L-A inboard motors are offered to the public, also applies to the new L-A Twin. The customer specifies the period of time during which he desires the return privilege, and the new L-A Twin makes good, or we do. In addition, we guarantee the new L-A Twin against defective material and workmanship without regard to time. Write today for complete particulars.

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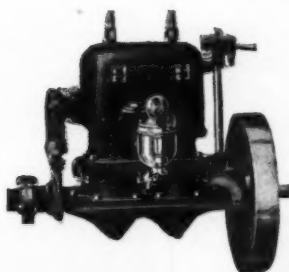
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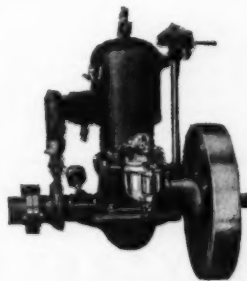
L-A Model 41

Single Cyl.—4 cye. 5 H. P. Motor. Built around Ford sized parts — replacements anywhere. Has Bosch Magneto and Impulse Coupling as standard equipment. Battery ignition in place of magneto if desired. Many special features. Weighs approximately 165 lbs. Detailed information on request.



L-A Model 68

6 and 8 H. P. 2 cyl.—2 cye. Engines 6 H. P. for 15 ft. to 24 ft. craft. 8 H. P. for 20 ft. to 30 ft. craft. Equipped with battery ignition. Bosch Magneto and Impulse Coupling if desired. Smooth running — easy starting — powerful — silent — clean — pleasing in appearance. Write for complete information.



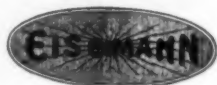
L-A Model 24

2½ and 4 H. P. Single cyl.—2 cye. Engines. 2½ H. P. for 14 ft. to 18 ft. craft. 4 H. P. for 16 ft. to 20 ft. craft. Equipped with battery ignition. Bosch Magneto and Impulse Coupling if desired. Simple — sturdy — easy starting — trouble free. Ideal for inland lakes and rivers. Write for detailed description.

LOCKWOOD-ASH MOTOR COMPANY, 413 JACKSON ST., JACKSON, MICH.  
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The Kaufman

## SILVERBEAM

A powerful electric searchlight, made especially for marine use. All brass, accurately machined and heavily nickel-plated. Thoroughly rust-proof.

Operates on 6 volt storage battery, using 30 candle-power nitrogen bulb. Projects the most powerful beam known for a light of its size. Indispensable for spotting buoys, landings, piers and anchorages as well as avoiding driftwood and rocks.

Swings in any direction or complete circle. Instantly detached for use as a work light. Also furnished with cabin control.

Prices.....\$8.00 to \$15.00

Sold by the best dealers everywhere. Write for Catalog No. 17

CHAS. KAUFMAN & SONS, Inc.  
Santa Ana, California



## Winter Cruising

(Continued from page 38)

in red ink concerning all lights in or about the harbor, utilizing any clear space near, or perhaps the margin of the chart opposite them and making the information so complete that the Light List need not be referred to at all when you want data concerning a particular light. Bracket these notes and connect them by a waved red line with the light to which they refer.

Next, using the Coast Pilot and such other sources of information as you may have, make notes concerning the harbor itself, locating them in any convenient clear space and connecting them with the port by a waved line. These notes should include the amount of rise and fall of the tides, direction and velocity of currents, time of slack water with reference to high and low water as given in the Tide Tables, character and location of the best anchorages, etc.

A depth-curve alongshore about the harbor drawn through the figures representing the maximum draft of your boat may save you a doubtful short cut some time.

Finally make a small red circle about every rock in the harbor which is in water deep enough to be navigable for your boat. Most of the rocks on small-scale charts are mere dots in the stippling or soundings and are easily overlooked. The red circle brings them to attention at once.

If your port opens right out to sea and your chart shows much off-shore area it is a convenience to draw a circle or arc around each light with the light as its center and with a radius equal to the visibility—distance of the light as shown by the scale of the chart and to draw bearing lines perhaps a point apart from the light out to the periphery of the circle or arc. This gives you your approximate position the instant the light is raised and its bearing gotten. But there are so many lights on charts of narrow waters that if this scheme is carried out on them the lines radiating from the lights run all over the chart and interlace so much as to be more confusing than useful.

When you have finished all the work your chart will have on it all the information contained in the Coast Pilot, Light List, and to some extent the Tide Tables, the range and distance of every mark and buoy from every other mark and buoy, all courses as described in the Coast Pilot; and all buoys, rocks, etc., will be so marked as to be instantly picked up.

The description of what has been done on the chart might give the impression that little else would be left visible on it. But since the work is all done in red and in fine lines, and supposedly with judgment as to its location, it does not cover or obscure any of the original printing on the sheet; and it much more than justifies the appearance of the chart and the time spent in doing it by making the chart the source of all information needed regarding the waters it represents. It has one other advantage also. It gives one a chance to check up compass-deviation by running known courses without the trouble of locating and plotting them, for the bearings and courses already plotted on the chart are all magnetic.

The man who amuses himself in the way I have tried to set forth not only increases the value of his charts tremendously but gets the finest kind of practice with parallel rule or protractor and dividers and in reading and converting the compass. And if he cultivates his visual memory, as every man who uses charts should do to the very best of his ability, he will be surprised when he comes to actually cruise in the waters he has worked over on the chart to find out how much of the work has stuck in the old bean and is ready for immediate use.

Try a chart with all the trimmings. I am confident that you will agree that the work would have paid for the trouble many times over if it had been hard and tiresome instead of being good fun and fine instruction.

## Radio Through the Binoculars

(Continued from page 128)

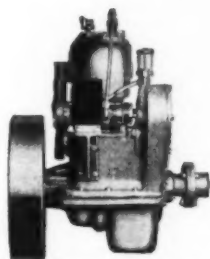
brought together and a connection was made at the forward end of the strip to a bronze bolt running through the bilge and coming up directly beneath the location of the receiving set. A cable was then run to the inside of the keel from this bronze bolt and concealed in between the paneling and planking up to the receiving and transmitting sets. This complete transmitting and receiving equipment aboard this 54-foot Great Lakes Cruiser at the New York Motor Boat Show was a revelation to the throngs of people who inspected this boat, for it was an example of a well planned transmitting and receiving equipment, complete to the last detail and built right into this cruiser as a part of its actual equipment.

Radio, thus installed aboard cruisers, is at its best, not only in regard to its appearance but also as to results and convenience of operation afforded.

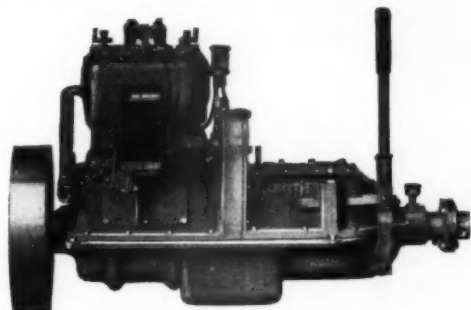
JESSE H. JAY.

# KERMATH

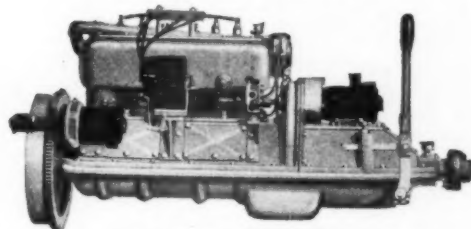
"A Kermath Always Runs"



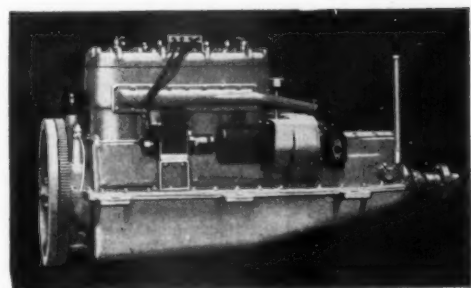
1 Cylinder, 3-4 H. P.



2 Cylinder, 6-8 H. P. and 4-5 H. P.



4 Cylinder, 20-25 H. P.



4 Cylinder, 35-50 H. P.

## Kermath Again Breaks All Maintenance Records.

When in 1922 we established a new low record of \$1.77 per motor for maintenance parts on all Kermath engines in service, we thought we had about reached the vanishing point, and that it would be impossible to lower that figure.

For at that time we already had the lowest maintenance charge of any marine motor made, and it looked almost hopeless to try to lower our own record.

But so sure were we of the innate goodness of Kermath motors, of the reliability that is theirs, we again set ourselves to the seemingly impossible task.

And we are mighty proud to be able to say we came thru.

On December 31st last we shipped Kermath engine No. 14161, and the total parts sales for service in 1923 amounted to \$23,737.12, giving the figure of \$1.68 for maintenance parts per engine.

We are mighty proud of this new record, and mighty proud of the famous line of Kermath motors that achieved it for us.

3 to 50 H. P. \$135.00 to \$1,050.00.

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Insure yourself absolute safety, comfort and cleanliness on your fishing and pleasure boating trips.

### Install Globe Anchoring Equipment

Adaptable for all ordinary fishing, pleasure and outboard motor boats.



Model No. 3 Portable Equipment, clamps on square stern or over side of boat. A Popular model



Spring type rope snubber, a unit of Globe Anchoring Equipment



Model No. 2 Standard Equipment, for pointed bows, has separate mounting base plate and locking eye

You'll like its many pleasing features. From a seated position the wringing of the anchor rope is automatically performed when anchor is raised, always leaving the anchor rope clean and dry. A spring type rope snubber is easily clamped on operator's seat. The Globe ten-pound Anchor (used as shown) is particularly designed to assure positive anchoring and will clear a straight prow of any boat. Complete Equipment consists of Automatic Wringer, Combination Anchor, Portable Rope Snubber and fifty feet of hard braided anchor rope.

Either equipment can be quickly disassembled for safe keeping.

Either Equipment aluminum finish for fresh water

**\$5**

Built strong for long service. If not satisfactory your money refunded. We also build Launch Anchoring Equipment. Write for Circular

With your order enclose price of Equipment wanted plus P.P. or if desired will ship by express. Shipping weight of either style 15 pounds

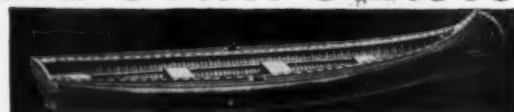
Either Equipments hot galvanized, for salt water \$9.95

Dealers, Jobbers and Boat Manufacturers, you should stock this profitable exclusive line your customers are asking for it.

**Globe Pattern & Mfg. Works, Jackson, Mich.**

All Globe Anchoring Equipment covered by exclusive and original Patents

## "Old Town Canoes"



### Especially designed for portable motors

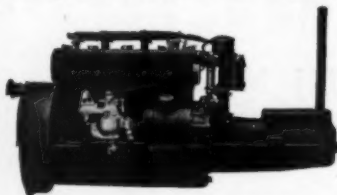
THE Square Stern "Old Town" combines the speed and practicability of a small motor-boat with the lightness and shallow draft of an "Old Town Canoe."

Of course the same rugged strength is built into the Square Stern as in all other "Old Town" models.

The new 1924 catalog is beautifully illustrated. It shows all models in full colors. Send for your free copy to-day.

OLD TOWN CANOE CO., 483 Middle Street, Old Town, Maine, U. S. A.

## ROBERTS MOTORS



Four cylinder, 4-cyls, 16 H.P.

Price of complete power plant, including motor, ignition outfit, built-in reverse gear, polished bronze salt water propeller outfit, and starting and lighting outfit (including ammeter, starting switch, and storage battery), \$485.00.

Write for Catalog and further information.

**ROBERTS MOTORS 200 Arthur St., Sandusky, Ohio**

Price of motor complete, including ignition outfit

**\$250**

## Adventures of The Motorboaters

(Continued from page 22)

money, too, and a frank willingness to pay his own way. But your note from Thomas Thomas reminds me of one I picked up at the general delivery window of the post-office, this morning. Bet you can't guess who it's from."

I couldn't, and Peter sprang the surprise. It was a brief note from our Bar Harbor Commodore and cynic; the crusty old reprobate who had taken Peter and myself to task for motor boating and the attendant life of lazy ease, which it was his contention the sport encouraged.

In a spirit of banter, Peter had given him the itinerary of our southern cruise, with a list of the probable stops. And this under-headed pessimist had seen fit to follow us with a last reprimand. The message was as brief as it was characteristic:

"Two months of laziness and non-production. Two months of dawdling your life away on the deck of a gasoline time-waster. Motor-boating isn't a sport, it's a brain and morale softener. I never saw a motor boat fan yet, who wasn't good-for-nothing."

"I regret we didn't challenge him to a duel when we had him face to face at the Bar Harbor yacht club that day," Peter grimaced.

We slept aboard that night, and a little after seven Thomas Thomas made his appearance, his arms filled with government maps and lunch! He had ordered a corking box of it made up at a local restaurant and on ice, in a special container, there was a delicious display of freshly boiled shrimp; Fernandina whoppers, not the small local variety.

"I'm assuming that you want to take this jaunt," he called, all smiles and affability.

"Ready for anything," assented Peter, "you know we're down here for health, not business, and finding an excuse to keep moving, is welcome. What is it this time?"

"Sea trout for this veteran," said Thomas Thomas, grinning in my direction.

We bore out into the bay, and northward. In an hour of straight going, we had reached the river at a point where it was separated from the ocean by a series of long, desolate keys, occasionally fringed with myrtle, bay and live oak, scrubby anemic. There was not a habitation in sight, nor any living thing. It was absolutely primeval.

Drusilla appeared to enjoy these cozy waterways and her shoal draft gave us no anxiety, although Thomas Thomas, at the wheel again, intimated that there were bad places in plenty, due to shifting sand bars, teased by the inexorable current and tides.

Now the river was not a mile across, and as unrippled as a little lake. We edged in as near the beach on the Key side as we dared, and just lazied along, enjoying it tremendously. There were sand hillocks, crowned with small palmetto and Christmas Berry bushes, and once we passed a considerable area of mangroves, their shiny, gnarled knees standing, life-like as to posture, in the water. Oysters there were at the roots of those mangroves, I knew, but we did not stop. Far to the westward, the shore line of trees was shaded into grey and purple, and one lone freighter, a river-boat, loomed out of the shadows, southward bound, from Jacksonville.

Some wild cattle waded along the oyster bars of the next long key, and several preoccupied razorbacks crunched fiddler crabs. Faintly, musically, came the boom of the ocean from across a mile of snowy sand, burning in the early morning sunshine.

It was off here that we anchored and, the tide conditions being ideal, all three of us threw out hand lines. Thomas Thomas, in addition to the cooked shrimp, had brought along fresh ones for bait, and no sooner had the weights taken our hooks to the bottom, than a sharp tug signified success. Shrimp makes the best possible lure in these waters. In twenty minutes, the fish box was wriggling and kicking with the largest whiting I ever saw, and then the trout began to bite. There were active schools of them, and when we changed our lines to accommodate two hooks, it was not unusual to pull up two splendid, colorful trout at a time, their fighting instinct taxing us all the while. I could have remained at it all day, without a whimper, but Thomas Thomas pulled up the anchor after a bit, and, with the engine slowed down, we again ran up the river, close to the immaculate beach.

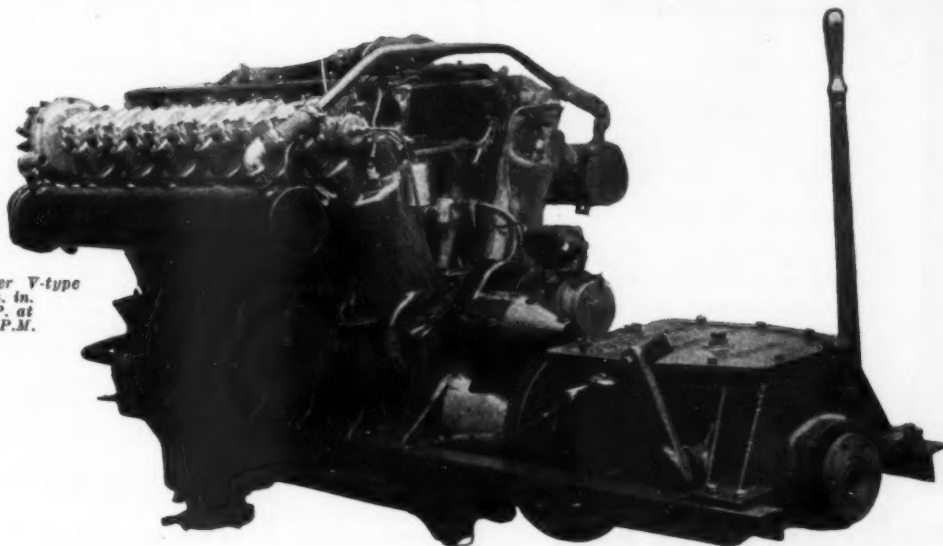
Ahead, where the stream took an easy turn, I glimpsed the first house. Or was it to be dignified as such? Nestling back, as if ashamed, in a clump of small oaks and bay trees, was a shack of crude boards, from which a thin wisp of smoke curled upward. The surroundings were desolate: a tiny inlet ran up from the river through muck and ooze and sawgrass, to finally lose itself beyond the oak clump. On three sides there

(Continued on page 136)



# GAR WOOD LIBERTY MARINE ENGINE

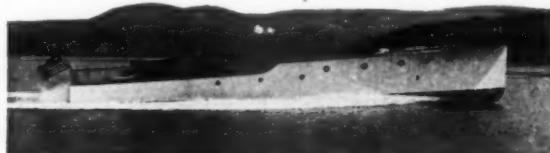
12 Cylinder V-type  
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450 H. P. at  
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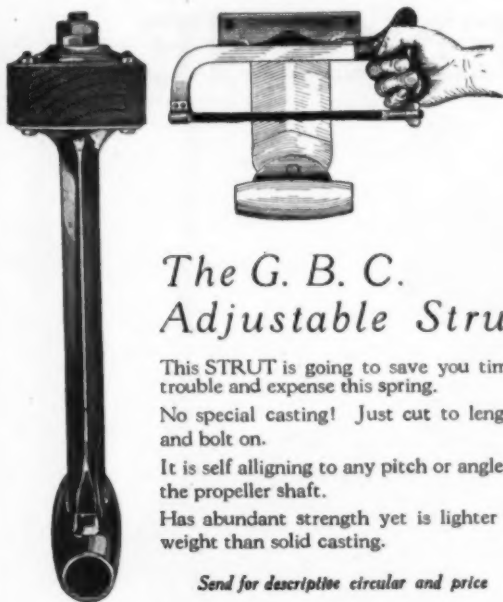
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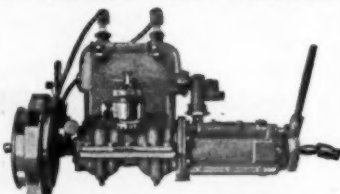
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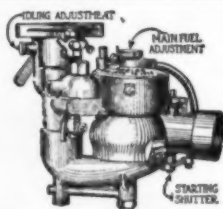
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 Recommended by Makers of  
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## Adventures of The Motorboaters

(Continued from page 134)

was no more than an undulating prairie of stubble and palmetto, broken occasionally by one lone bay or myrtle. Thus, the occupants of the shack commanded a perfect view of the surrounding country. If there ever was a strategic spot, this was it, both for land and water surveillance.

The house stood perhaps three hundred feet back from the water's edge, and a ramshackle, rickety dock, composed of intermittent planks placed perilously atop very high, rotted piles, was there for no earthly purpose that I could determine, save to act as runway for two particularly vicious, snarling, lip-curling mongrel dogs that dashed out at our approach, and, standing at the very end of the swaying dock, glared at us to the accompaniment of warning barks. Three row boats, weather-worn, of no account, lay bottom-up on the dirty beach, and an equally disreputable motor boat, engine uncovered, oil-soaked, was anchored not far distant. Taking everything into consideration I had never seen a more forbidding scene. And withal, an air of mystery hovered above and around it.

Thomas Thomas did an unexpected thing.

He brought Drusilla up to the piles and made her fast, while, overhead, those ugly dogs, hair on end and teeth showing, continued to bark challenge. By stepping over into one of the leaky row boats Thomas Thomas gained the beach, from which point of advantage he waved to us.

"Wait for me a minute," said he, "I want to look this rookery over."

I was not positive about it, but I thought I saw his hand slip back for the flash of a second, to his hip pocket. As he turned and walked casually up the beach and to the higher ground near the shack, the two dogs came snarling at his heels. He paid no attention to them.

"Can't see what he wants up there," observed Peter, "probably a hermit; or not inhabited at all. Queer fellow \* \* \* investigative as they make 'em."

I could not get out of a nook of my memory the words which Thomas Thomas had dropped at the conclusion of our shrimp fleet adventure. What was the exact phrasing? "From this on, Drusilla has an objective." It was a significant remark.

"Think I'll trot after him and see what sort of a place it is," I declared, following our friend's example, and making shore by way of the row boat and a few projecting piles, "come along?"

"Think not," retorted Peter. "I'll have a pipeful of tobacco and look over the new charts."

Thomas Thomas was not in sight. The oak clump had completely enveloped him. The dogs came back to investigate me, but did not offer actual attack.

Everything about this island rendezvous was sullen, dirty, uninviting. I reached the first cluster of bays and stunted oaks and the shack appeared more in detail. It was a patchwork of driftwood, bark and fragments of tin. Now voices could be heard, raised in rather excited alternation; one of them, at least.

"Git!" the deeper, gruff voice was thundering, "you ain't got no right here. Them dogs barking ought to have been enough. I don't want strangers hanging around."

"Why be so infernally unsociable," the second voice, the voice of Thomas Thomas, was answering, "I'm here on business. You needn't be afraid of us. We're all O. K. Come on \* \* \* give us a pint. We intend to anchor off the beach between here and Jacksonville tonight, and a drink wouldn't go bad. One of us has a heavy cold."

"I ain't got no likker," mumbled the gruff voice, "if some of them niggers told you there was any fer sale here, they lied."

I had come up near enough to the shack to see them; Thomas Thomas, bareheaded and smiling, as usual, under the oaks, a dog snapping at his legs, and his companion, a trampish, unshaven man of uncertain age, whose entire make-up suggested depravity. He was even worse than the familiar cracker of the backwoods. As he stood in the doorway of the shack he glowered angrily at Thomas Thomas, his face livid.

They were too preoccupied to notice me.

"Oh, come now," coaxed Thomas Thomas, "it's all right, I tell you. Do we look like Federal officers? Joey, the sailboat man, told us we could get a snifter here at a reasonable price, but it's not the price that worries us. We want the drink."

Thomas Thomas had a way with him.

"Hello, old man!" he exclaimed, his face clouding as he caught sight of me, "I'm glad you came up. He is suspicious of us. Tell him about Peter's cold and that we don't wear brass buttons or a badge."

"For my part, I was completely flabbergasted. It was Thomas Thomas who had warned us against drinking any-

(Continued on page 138)

# PACKARD MARINE ENGINES

*Par I—equipped with  
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Races at St. Peters-  
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27 Miles Per Hour*



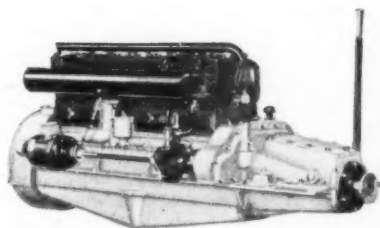
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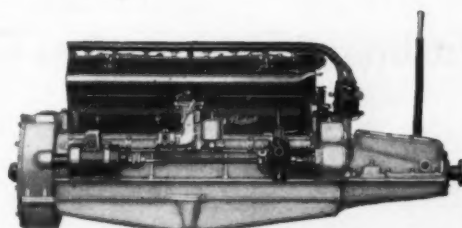
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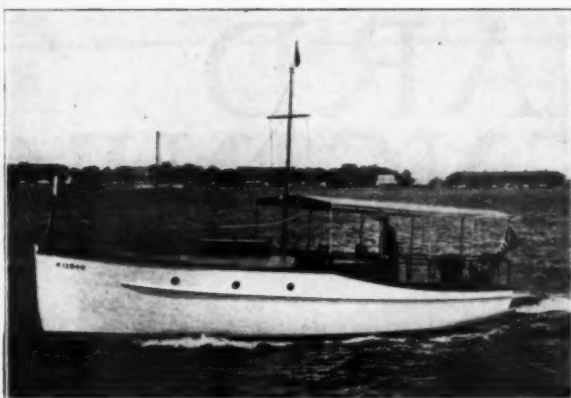
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## Adventures of The Motorboaters

(Continued from page 136)

thing in town, and here he was dickering for illicit home-made booze! The situation was unbelievable. But whatever his idea, I entered into the spirit of it. Bills flashed at this juncture made the other's morale crumble. He asked a number of questions, particularly as to Joey, and ended, after much ceremony and scratching around under an old bed, by handing out a pint flask of moonshine for which Thomas Thomas gave him the munificent sum of two dollars, an above par price.

"That's more like it," Thomas said good naturedly, "thanks. Call those damned dogs off. Nice and quiet out here—see you again some day."

He took my arm, and we passed down the weedy path to the beach and into the companionable safety of Drusilla's canopy-shaded after deck. He cast off, started the engine, and in a few moments we were turning in mid-stream, headed for Matanzas Bay again, contrary to his Jacksonville story to the man on the key, who stood watching us from a high point near the inlet.

Finally Thomas Thomas spoke, his opening words directed to me:

"Guess you're wondering what in the world made me do that?"

"Well," I replied, "it was a little unexpected. And——"

"See this stuff," as he extracted the pint flask from his coat pocket and held it up to the light, where its sickly yellowish white contents caught a glint from the sun, "poison—Death in the bottle. I wouldn't take a sip of that for a thousand dollars."

"Then why did you buy it?" I demanded, perplexed. Peter sat on the cabin roof, eyeing us both interestedly, "you knew the place: you knew there was a still back in the oaks somewhere? What's the big idea?"

"Maybe just humanitarian," answered Thomas Thomas, with a quizzical turn of his head and a flash of those penetrating brown eyes of his. "it's a bottle-full of evidence, you know. Too many people are dying in these parts from liquid dynamite. I'll just have this analyzed. You boys didn't object, I hope. Not a long delay. Don't believe in butting in to other people's business as a rule, but as we were up this far, it seemed a sensible thing to do. What was that you told me when we first met—that some old rooster had said a motor boat was a lazy plaything: and I said, following our shrimp fleet experience, that Drusilla was destined to have a real, workmanlike objective from this on? It's coming true, isn't it? Now for a third chapter. With your permission, Captain"—he smiled at Peter—"Suppose we run back now, through the draw, and along the mainland shore. If I'm not very much mistaken, there'll be some fun—and a dash of the educational."

"Suits me," said Peter quickly, "but you have us guessing. Are you doing this on a dare? Are you helping us prepare material for the Commodore?"

"Why not?" was the enigmatic answer.

During the hour's run to the draw, Thomas Thomas sang snatches of familiar college songs, in which we joined. He insisted upon keeping to the wheel, while the lunch box was opened and we made short shrift of the delicious tid-bits, including iced shrimp.

And now came scene two, in a day of surprises!

It was obvious, from the business-like manner in which Thomas Thomas headed for a certain beautiful and secluded stream, some nine miles southward, that his plans were not in any sense embryonic. Never had Drusilla behaved herself better. Throttled down again, we skirted the wooded shore, and at last dropped anchor two hundred yards from the mouth of the little river. It was a gorgeous spot, peaceful, hushed, and remote. The stream made several slow turns, to at last disappear in the jungle of trees and creepers. On either side of the mouth, through which a considerable tide was now coming, there were head-high barricades of saw grass and tangled mangroves. Here, when muck beds or sand patches permitted, husky little sand pipers were feeding, blue heron winged away at our approach, and several wild ducks swam in the marsh grass.

"What a spot for a camp!" exclaimed Peter, a suggestion which met with my complete approval.

"Ever been up one of these small fresh-water streams?" Thomas Thomas inquired, "if not, it's well worth your attention." Suppose we get out the tender and row in a short distance?"

Our small boat responded easily to Peter's lusty oar strokes, although the tide was against us. On either side, the grass and mangroves threw dark green shadows and ahead, fish leaped boldly from the water. It was fairly alive with them.

"Mullet," Thomas Thomas explained, "but the only way you could catch them would be with a net."

(Continued on page 142)

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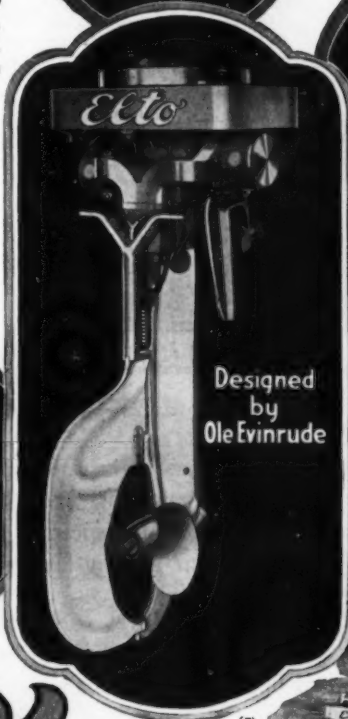
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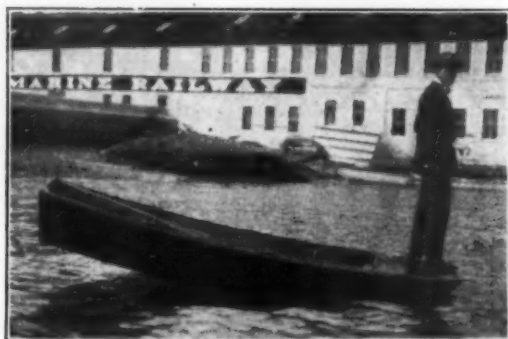
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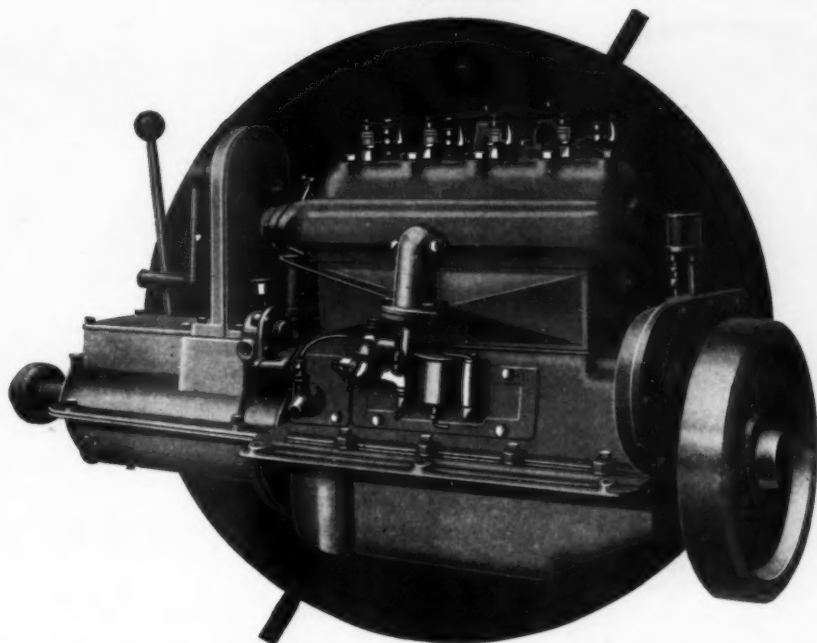
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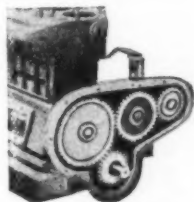
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## Adventures of The Motorboaters

(Continued from page 138)

We had gone perhaps a quarter of a mile and the stream was narrowing sharply, when Thomas reached for the oars, after two or three sharp glances around. He had no sooner taken them from Peter than one was thrust over the side, into the water. He appeared to be feeling with it. I saw a triumphant gleam in his eyes.

"I thought so!" he said, without raising his voice, "this is our lucky day. Look!" And with that, he raised the oar slightly and disclosed the soaked mesh of a very fine net, held taut.

We looked at this wizard in sheer astonishment. Was this a local game warden we had selected as our cruising companion?

"An interesting lesson here for you," Thomas Thomas went on, steadying the boat against the grassy shore with his oar, "now here is what's happening. That net reaches from side to side of the stream. It's put there, held by stakes, at the turn of the tide, as it's going out.

"Why? Because the fish, hundreds and hundreds of them, are entering the river to feed or spawn—speckled river trout, Mr. Angler, and black bass—up to eight and nine pounds, the big mouth variety; fresh water bream, mullet, whiting, spots, yellow-tails, bank-winders, gullembotics, as the negroes call them, and an occasional drum of the smaller size. Every incoming tide brings them in, where they go to the first secluded pool or hole, up yonder under the trees. And when the tide starts out, and they attempt to go with it, as is their habit—what happens? That seine across the river stops them. After a few fitful struggles, with the water lowering by the minute, they beat it back into the pools."

"What a wonderful place to fish!" I cried.

"Exactly," agreed Thomas Thomas, "but not with nets. And the Law says you can't cart them away by the wagonload, after rigging up the seine at high water. It's slaughter, it's unsportsmanlike. It's taboo! And still they do it. Boys, it's just such practices as this that are destroying Florida's fishing grounds! As bad, or worse, than the wilful destruction of the shiners and minnows from the shrimp boats. Crooked! Dastardly. Drusilla, please take note, has again performed a useful human service."

I looked at Peter and Peter looked at me. There was no question but that our thoughts coincided perfectly at this moment. Who was this altogether affable, sunshiny Free-Lance Agent of Humanity, with his mist-colored Norfolk and his bare head; his perfect poise, his indescribable personal magnetism? Obviously he had not told us all there was to be told. The unvoiced chapter of his life would be the most interesting of all.

"But I want to know where you come in to rummage around for this sort of information," Peter questioned, "it's interesting and I must say I've enjoyed every minute of it; notwithstanding which, a chap's curiosity is aroused."

Thomas Thomas did not permit his quiet self-possession to be ruffled. The corn cob was taken methodically from his mouth, as he made reply:

"Am I correct in one thing: that you fellows reached Florida still rankling from some salt that had been rubbed into your hide on the subject of motor boat fans being wasters, artistic loafers, and all-round no-goods as far as producing something useful in the world is concerned?"

"Oh, I don't know that we took it that seriously," said Peter, "but it's a fact: there are people who look upon a motor boat as a sinful luxury, as a rich-man's excuse for doing nothing at all for protracted periods, and doing it flauntingly."

"That being true," continued Thomas Thomas, "why not accept the little incidents of which this one is an example, as my contribution to the story you can tell—or write—some fine day, as a decisive refutation of such doctrines. We are having a good time and engaging in—well, what shall I say—an educational pursuit, in the same breath. It is a cruise with a side-issue purpose."

Which was trutalk and beyond questioning. I gave Peter a look calculated to cut him short, and the incident was closed. My personal opinion and suspicions I kept to myself. Of one thing I was very certain: whatever the secret status of Thomas Thomas, he was a man's man, strong, brave, sincere and to be trusted. In the meanwhile, he was automatically providing us with a fancy line of thrills.

Having untied the seine from the right hand stake we rowed cautiously up the creek, until trees met overhead and there were shadows everywhere on the tranquil waters. Several pools were literally alive with fish, substantiating our friends' prediction.

We visited three other creeks that afternoon. One had a

(Continued on page 146)

# zinc

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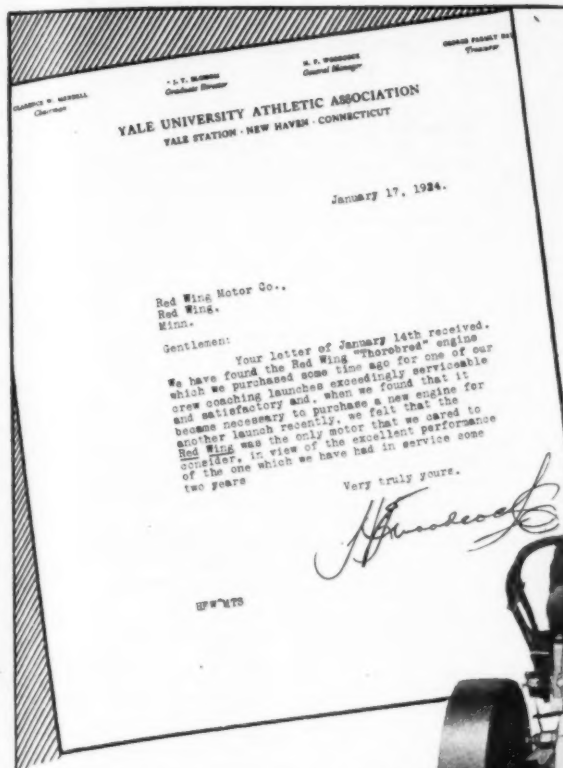
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Write today for descriptive literature, and we will be pleased to submit specifications and prices for your approval. A bulletin describing these three famous Runabouts is ready for you. Ask for it.

**Racine** **Wis**  
TRADE MARK REG.

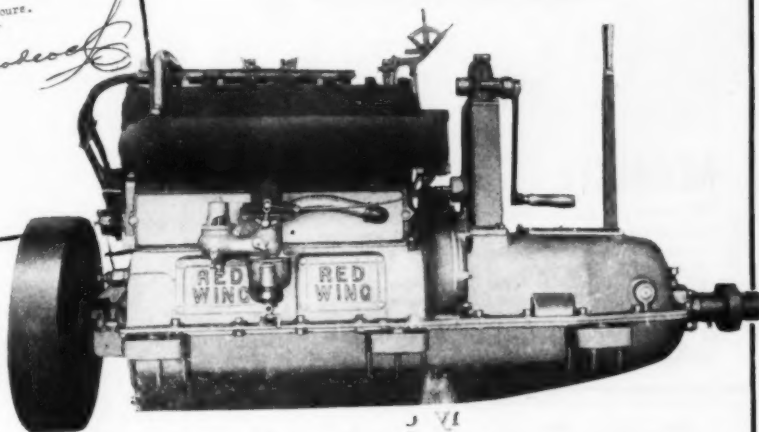
**RACINE BOAT COMPANY, 1809 Holborn St., RACINE, WISCONSIN**



# THE OFFICIAL MARINE ENGINE OF YALE UNIVERSITY

IS THE

**Red Wing Thorobred**  
THE MOTOR WITH POWER TO SPARE.



The engines referred to in the above letter from the Yale Athletic Ass'n. are the model AA 18-24 H. P. Red Wing "THOROBREDS."

## It's Performance That Counts

And this is the secret of the success of Red Wing "THOROBRED" motors.

These engines have become famous for their efficient and economical performance, and their remarkable endurance and dependability.

Owners the world over are constantly sending us repeat orders for Red Wing "THOROBRED" engines, because of the highly satisfactory service which their first engine has given them.

Such a record means a lot to the buyer of

his first power plant. Play Safe.—Select a "THOROBRED" and enjoy the satisfaction which such an engine is sure to give you.

Our new RED TOP 50 H. P. High Speed "THOROBRED" is now ready for delivery.

A reliable light weight speed boat engine.

Write for catalog illustrating our 8 sizes of engines from 4 to 50 H. P.

**RED WING MOTOR CO., Dept. "B" RED WING, MINN., U. S. A.**

#### Western Distributors:

Pacific Marine Supply Co., 1213 Western Ave., Seattle, Wash.; Emil Aarup, 5110 S. Main St., Los Angeles, Cal.

#### Eastern Distributors:

Verrier, Eddy Co., 222 E. 42d St., New York, N. Y.; W. H. Moréton Corp., 780 Commonwealth Ave., Boston, Mass.; W. E. Gochenaur Mfg. Co., 631 Arch St., Philadelphia, Pa.; James H. Hutchinson, Alexandria Bay, N. Y.

#### Southern Distributors:

Arthur Duvic's Sons, 122 Chartres St., New Orleans, La.—Burroughs-McMeekin Co., 30 East Bay St., Jacksonville, Florida.

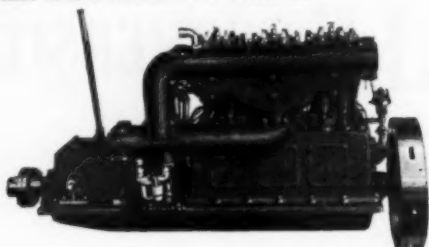
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Canadian Fairbanks-Morse Co., Ltd. with branches at Montreal, Toronto, St. John, Winnipeg and Vancouver. Ditchburn Boats, Ltd., Gravenhurst, Ont.

# REGAL ENGINES

## 23rd Year

**Y**OU can always count on a Regal Engine to give you reliable satisfactory service, with low fuel expense and a minimum of attention.



Regal Model JC  
Weight 2800 lbs.

4 Cylinders, 36 H. P.  
Price, \$1500.

17 sizes—2 H.P. to 100 H.P. One to eight cylinders. Weight 130 lbs. to 8000 lbs. All four cycle type. Equipped to use gasoline or kerosene fuel.

## REGALITE LIGHTING PLANTS

Air cooled engine, direct connected generator and 16 cell storage battery. A compact electric plant for houses, stores and boats. Price, \$400.00.

Write today for catalog and latest Regal Prices

**REGAL GASOLINE ENGINE CO.**

74-82 W. Pearl St. Coldwater, Mich.

## Enjoy Boating at Night!

Easy to Install a

## COMET LIGHT OUTFIT

Write us stating the number of lights you want to burn at one time, and the candlepower of each. We will tell you what equipment you should have, and the price.

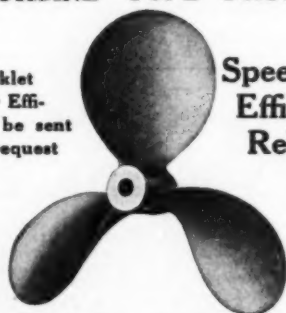


**COMET ELECTRIC CO.**

1241 ST. PAUL ST., INDIANAPOLIS, IND.

## HYDE TURBINE TYPE PROPELLERS

Our booklet  
"Propeller Efficiency"  
will be sent  
free upon request



Speed  
Efficiency  
Reliability

**HYDE WINDLASS CO., Dept. B, Bath, Maine, U.S.A.**

## Adventures of The Motorboaters

(Continued from page 142)

net across its mouth; up in a thicket, hidden beneath an old over-turned and abandoned row-boat, on the third stream, Thomas Thomas uncovered a quantity of dynamite—the kind used for culling quick harvests of fish in secluded rivers and lakes! No explanations were necessary to convince us that a particularly mean gang of Fish Pirates was at work along the coast.

But of his discoveries and of our amazingly unconventional cruises, Thomas Thomas said no more, until the morning we were scheduled to start southward. Captain Mock had never even taken the trouble to write or send a messenger down to the dock. It was a boatman who told us the restless Cap'n had left town very hurriedly the day before, after receiving a telegram from Miami. This left us without a pilot, a guide; one familiar with the Inside Route to Key West, and then around through a constellation of keys, to the Gulf. Thomas Thomas was our salvation.

Drusilla took on supplies enough for a two weeks' run, barring gasoline, which we could get at dozens of places en route, and on a sunswept morning, we passed through the draw, headed straight into a Matanzas—full of opal, vivid green, wheeling gulls, and romance. Thomas Thomas, his coat thrown off, his corn cob clamped in the corner of his mouth, was communicative for the first time in several days on a subject which we felt disinclined to discuss.

"If I'm not very much mistaken, gentlemen," he observed "you are in for a series of interesting adventures. Perhaps I can name a few of them, or, better still, run over some of the practices which are not according to the Law, in this section. For one thing, aliens are being landed by the score . . . mainly Chinese, considerably south of here. Why not look that over? Mullet is being caught, packed and shipped out of season. There's shooting in supposed game sanctuaries. I forget how many game wardens and special officers have been murdered around on the other side, by folks who think that the U. S. Government has no right to tell women they shan't wear egret plumes. Rookeries are still being stripped and mother birds sacrificed to human greed—and pride. Suppose we provide that Bar Harbor ex-Commodore of yours with some food for thought, as regards the futility of motor boating."

"By the way—" and Thomas Thomas shifted his corn cob; "by any chance did you read in the local paper back there, that a stop is to be put to the destruction of small fish by the shrimp fleet, and that three men were arrested for dynamiting a creek below the city . . . and that a chap was arrested over on a river key for manufacturing and selling poison shine?"

(To be Concluded)

## Better Boats to Race

(Continued from page 126)

company the entry, which fee will be returned in case the boat starts in good faith.

21. There shall be no limit to the number of challenges from any individual club.

22. Competing boats shall be steered by a competent amateur helmsman. The Race Committee shall pass upon the qualifications of the helmsman. No boat shall be allowed to start having a helmsman not acceptable to the Race Committee. For the purpose of this race, an amateur is defined as one who is not or has not been within the last five years, engaged or employed in mechanical capacity in the business of building, operating or repairing boats or internal combustion engines as a means of livelihood.

23. Competing boats must carry full equipment in the race, including floor boards, seating accommodations for four persons, cushions, upholstery, etc.

24. Competing boats must carry a racing number, assigned by the Race Committee and have same painted on each side and stern. Numbers shall be at least fifteen inches high.

25. Competing boats must report to the Race Committee at a place designated by them at least one hour previous to the start of the races, and immediately upon crossing the finish line, competing boats must again report at a place designated by the Race Committee. The Race Committee shall inspect and check up all boats for equipment, etc., both previous to the start and immediately after the finish of same. Boats failing to finish with full equipment on board shall be subject to disqualification.

26. Competing boats must demonstrate to the satisfaction of the Committee that they are manageable at racing speed and not a menace to the safety of other competitors.

27. The race shall start at 2 P. M. No postponements from the advertised time of start of the race shall be allowed for any cause.

28. Boats, in order to qualify must show an average speed of 40 miles an hour in 1925. This speed must be made over two laps of the regular race course.

29. Competing boats shall not be equipped with a gear box. (The term, gear box, is interpreted to mean not only gear boxes with a step up gear ratio, but gear boxes with a one to one ratio, and any form of device to increase or decrease propeller speed above or below engine speed.)

It is further ruled that the propeller shaft must be in line or nearly in line with the crank shaft and rotate at exactly the same speed and that the function of any reverse gear or clutch used shall not be different from the ordinary use of a reverse gear, that is: to reverse direction of the rotation of the propeller or for the purpose of idling. In other words, no device for stepping up propeller speed shall be included in the reverse gear or any other form of gear box.

30. Competing boats must carry a sufficient quantity of fuel for the entire race. Refueling after the start of the race shall not be permitted.



# EVINRUDE



## You-This Season!

VACATION days ahead! Time now to start planning your outing equipment. Time now to cross oars off your list of "fishin' tools", once and forever. Time now to select the boat-power that will add new joys to your water trips for many seasons to come.

A sturdy little Evinrude Sport Twin will prove the best addition you have ever made to your outing kit. Here is boat-power in its handiest form—with all the dependable sturdiness that the name Evinrude guarantees.

See your sporting goods or hardware dealer today. Or write for our latest catalog illustrating and describing Evinrude Motors in full detail.

*Evinrude Motors are made in five models, both one and two cylinders — detachable and built-in.*

### Sport Twin Features

Champion of lightweight, two-cylinder motors

*Quiet, Smooth Power* — Balanced twin design prevents vibration. Exhaust muffled to low purr.

*Flexible Speed Control* — Accelerates from 600 to 2100 R. P. M. in one second. Specially designed Zenith carburetor.

*Easy Starter* — Whirls flywheel past 4 firing points. Instant starting.

*Automatic Reverse* — Pressure on tiller reverses drive from full speed ahead to astern. Safe and certain.

*Built-in-flywheel Magneto* — Evinrude designed and built. No heavy, uncertain batteries.

*Safety Tilt-Up* — Swings gear housing clear out of water. Protects motor from snags and shallows. Makes beaching easy.

*Weight* — 40 pounds, complete.

**Mail This!**

### EVINRUDE MOTOR COMPANY

116 EVINRUDE BUILDING

MILWAUKEE, WIS.

DISTRIBUTORS:

69 Cortland St., New York, N. Y.  
239 Atlantic Avenue, Boston, Mass.

119 Broadway, Oakland, Calif.  
211 Morrison Street, Portland, Ore.

Evinrude Motor Co.  
116 Evinrude Building, Milwaukee, Wis.  
Gentlemen: Send me your latest, illustrated catalog.

Name

Street Address

Town

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating, 119 West 40th Street, New York

## The Trouble-Proof Spark Plug for Boats

# RAJAH SPARK PLUGS

Waterproof Type



**Waterproof  
Shockproof  
Breakproof**

Price \$1.25—All Threads

**Not "just another  
spark plug" but the  
best boating plug  
ever developed.**

**T**HE Waterproof type RAJAH Plug is the best plug to use in marine motors, particularly in open boats and outboard motors. You can drench this plug with spray or rain without missing an explosion. It is absolutely waterproof—in fact, the only successful waterproof plug on the market.

For cruisers and protected engines, there's nothing better than the Standard Rajah Plug.

Waterproof Rajah Plug.....\$1.25  
Giant Rajah Plug..... 1.25  
Standard Rajah Plug..... 1.00  
Complete with Terminal

**If your dealer can't supply genuine Rajah  
Spark Plugs and Terminals, write us,  
stating thread or make of motor**

*Rajah Terminals fit all spark plugs and are used by the leading manufacturers of marine motors, automobiles and ignition instruments. The Rajah Solderless Terminal is a special design which the motor owner can install in a few seconds without solder or tools. Send 15c for a sample.*



Section  
RAJAH  
Solderless  
Terminal

## RAJAH AUTO SUPPLY CO.

BLOOMFIELD, N. J., U. S. A.

*Marine Distributors of Rajah Spark Plugs and Terminals*

Geo. M. Auten & Co., New York City  
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E. J. Willis Co., New York City  
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Chandler & Farquhar, Boston, Mass.  
Rapp-Huckins Co., Boston Mass.  
Geo. B. Carpenter & Co., Chicago, Ill.  
Henry H. Smith & Co., Detroit, Mich.

Marine Equipment & Supply Co., Philadelphia, Pa.  
Gas Engine & Boat Corp., Norfolk, Va.  
D. M. Jones Co., Elizabeth City, N. C.



## Men who know gas engines insist on Columbias

**T**REAT an engine to perfect ignition and you double its life. That's why seasoned boatmen insist on Columbias—the most reliable of batteries. Flashing, intense sparks from Columbias fire the whole charge. Instant starting too. Wonderful lasting power in Columbias. You get a lot of good battery for your money. You draw fire from Columbias all day and find them strong next day. Picked up new strength while resting at night! Great batteries, Skipper.

Columbia Dry Batteries are sold by marine supply dealers, electrical, hardware and auto accessory shops, implement dealers, garages, general stores. Insist upon Columbias.

NATIONAL CARBON COMPANY, INC.  
New York San Francisco  
Canadian National Carbon Co., Limited  
Factory and Offices: Toronto, Ontario

# Columbia Dry Batteries

—they last longer

*Out in the weather,  
you'll like the Co-  
lumbia steel case  
Hot Shot. Water-  
proof. 4, 5 or 6  
Columbia cell-  
power.*



*Fahnestock Spring  
Clip Binding Posts  
on Columbia Ignitor  
at no extra cost.*



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## Increase Your Contacts

Every time you write to a man, you establish a mental contact with him. Orders and customers are developed out of just such contacts.

Advertising is simply a wholesale method of establishing these contacts. It is up to you to take the initiative in telling prospective customers about your product. If you don't tell them, how will they ever hear of you?

The great volume of advertising in each issue of MoToR BOATING shows that it is most successful in establishing the right kind of contacts for its advertisers.

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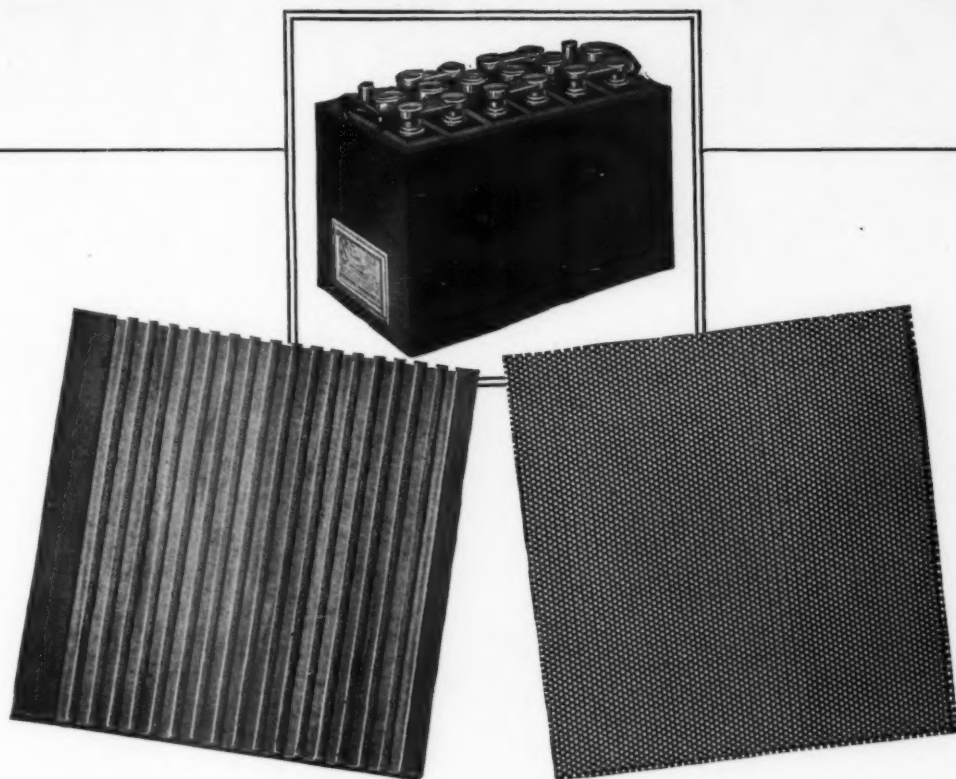
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CAREFULLY selected wood separators plus the highest grade of perforated rubber sheets separate the plates in the Westinghouse Standard Battery. The added cost of this method is justified by the longer life and greater efficiency obtained.

This is only one of many features contributing to the ruggedness and dependability which make Westinghouse Standard the ideal battery for marine operating conditions.

WESTINGHOUSE UNION BATTERY CO.  
Swissvale, Pa.

# WESTINGHOUSE BATTERIES

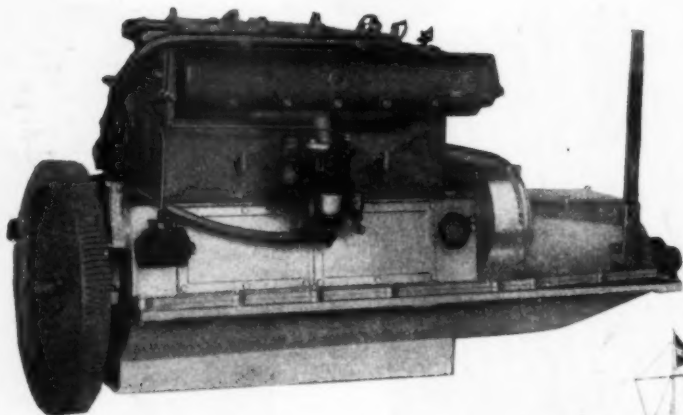


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# FAY & BOWEN

## ENGINES BOATS

**LN-43**  
43½" x 51½"



25 H. P. at 600 R. P. M.  
40 H. P. at 1000 R. P. M.  
Weight, 950 lbs.

**SEQUOIA,**  
45" Auxiliary  
designed by  
Tams & King.  
LN-43 engine.



**F**OR more than twenty years this organization has been producing high grade marine engines and motor boats, always keeping abreast of the times, sometimes a bit ahead perhaps, in meeting the requirements of particular yachtsmen.



36' x 10' Hand V-bottom cruiser.  
11 miles with LN-43.

If you are choosing a new engine this year, we request the privilege of submitting data, specifications and prices of Fay & Bowen engines. Whatever engine you ultimately select, we are confident you will find this data interesting and well worth reading.

12 H. P. to 55 H. P.—all four cylinder, four cycle type.

*And ask us about Fay & Bowen Standardized Runabouts —  
20, 24, 25, 27 and 30 ft. in length.*

## Fay & Bowen Engine Co.

104 Lake Street

Geneva, N. Y.

New York: 44 Third Ave., at 10th St., Sutter Bros., Representatives  
Philadelphia: 116 Walnut St., Marine Equipment & Supply Co., Representatives  
Boston: 9 Commercial Wharf, Gray-Aldrich Co., Representatives

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1924

N

R. P. M.  
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